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ANALYSIS OF LIGHTHOUSE STATION TEMPERATURE AND SALINITY DATA PHASE II

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November 1977

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ABSTRACT

This report summarises certain features of salinity and temperature time series obtained from lighthouse stations along the British Columbia coast together with related rainfall data. The presentation is intended to facilitate analysis of temperature or salinity trends and fluctuations as well as the relationships between data from different stations. The data are presented as annual trends, monthly means, standard deviations and spectra and cross-spectra. The analysis indicates relatively close correspondence between stations at periods greater than a year, but with significant differences at higher frequencies.

I. INTRODUCTION

The purpose of this report is to extend the analysis of daily sea surface temperature and salinity observations from the 3 stations described in Pacific Marine Science Report 76-11 (Webster and Farmer, 1976) to a further 14 stations along the B.C. coast. The former report was intended primarily to develop techniques for presentation of certain important features of the data such as descriptions of long and short term variations, and possible relationships between the data from different stations. That report discussed the data from 3 stations on the outer coast of B.C.; Kains Island, Amphitrite Point and Langara Island, which will also be included in the present report for the sake of completeness. The remaining 14 stations discussed here include a number from the inshore waters of the Strait of Georgia as well as several more from the outer coast of B.C.

We are indebted to F. Barber for drawing attention to an error in the precipitation data presented in Pacific Marine Science Report 76-11. The analysis of precipitation data is repeated for the 3 stations considered in that report and extended to include a rainfall analysis for most of the additional 14 stations examined in the present study.

II. DATA SOURCES

A. Stations

The locations of the 17 light stations used in the present analysis are shown in Figure 1. Daily precipitations are observed at the Langara Island, Amphitrite Point, Cape Saint James, Departure Bay, Egg Island and Bonilla Island light stations whereas precipitations are available for observing positions closeby to all the other light stations except for McInnes Island and Sisters Island. The station locations and the data record lengths for temperature, salinity and the closest precipitation observations are tabulated in Table I. To facilitate further discussion the light stations are divided into 5 geographical groups each consisting of 3 or 4 stations. Also indicated in Table I are the approximate dates that the salinity analyses changed from the conductive salinometer method to the less accurate hydrometer determination for each light station and the distance in miles between the precipitation observations and the light stations.

B. Procedures and Equipment

1. Temperature and Salinity Data

The observation procedures are summarized in Pacific Marine Science Report 76-11 which in turn are based on procedures described in Pacific Marine Science Report 72-13 (Hollister and Sandnes, 1972). The daily observation of temperature and the collection of a salinity sample were normally within 1 hour before high tide. The sample collected at Active Pass was originally collected only near high water but for several years an additional sample was collected near low water. The analyses of data for 'Active Pass High Water' and for 'Active Pass Low Water' will be considered separately.

Several changes in the observation procedures were made over the years, the most noteworthy of which was the switch from the use of the conductive salinometer for determining salinities to the much less accurate hydrometer. The changeover dates occurred for most stations around the beginning of 1970 (See Table 1). Although in Pacific Marine Science Report 76-11 which examined 3 light stations, data collected after 1969 was not considered, the analysis will be extended to the end of 1973 for those stations which have only a few years of data in the present report.

2. Rainfall Data

The rainfall data discussed in this report are, in fact, daily observations of total precipitations made for the Climatology Division of the Meteorological Branch of the Department of Transport. Snowfall, when it occurs, is converted into the equivalent rainfall and reported as part of the total precipitation. As the precipitation data was provided in inches per 24 hour period the units used in this report for precipitations (rainfall) will be inches per day (in.p.d.). The climatological day over which the daily precipitation observation is taken is defined in Pacific Marine Science Report 76-11.

III. DATA ANALYSIS

A. Data Preparation

The initial data preparation differed in some respects from that carried out in the data analyses for the 3 light stations in Pacific Marine Science Report 76-11.

1. Temperature and Salinity Data

The daily seawater salinities and temperatures were available on a magnetic tape supplied by the Marine Environmental Data Service for all 17 of the analyses considered in this report. As far as the analysis procedures go, temperatures and salinities are considered identically.

As in Pacific Marine Science Report 76-11 missing data were merely filled in by a linear interpolation between the end points of the data gap. Again the data were checked for any spikes but this time these were not generally removed. Spikes which were obviously errors such as salinities over 35.0°/$_{oo}$ (parts per thousand) were replaced by the arithmetic average of the 2 data points on either side. In the record for Cape St. James the daily salinities suddenly dropped from over 30°/$_{oo}$ to 0.0°/$_{oo}$ for 2 consecutive days and then back to over 30°/$_{oo}$. Because salinities at Cape St. James rarely went below 30.0°/$_{oo}$ it was decided that the 2 zero salinities were erroneous and so were 'filled in'. On the other hand for stations such as Active Pass which showed large daily fluctuations the sudden occurrence of low salinities was relatively frequent. Hence, only for the one occasion for Cape St. James was the sudden occurrence of a low salinity sufficiently suspect that it should be removed.

Table 2 is a summary of the number of temperature and salinity data records which were missing from that section of data used for spectral analysis. Also shown are the percentages of missing data of the record analyzed.

It can be seen that Cape St. James, Departure Bay and Langara Island have the most incomplete records having more than 10% of both their temperature and salinity data missing. Generally, the occurrences of missing data for these 3 stations were spread out over the entire period of record although some years had considerably more missing data than others. In 1954, 270 temperature and salinity measurements were missing from the record for Cape St. James. The worst year for Departure Bay was 1966 in which 135 temperature and salinity measurements were missing and for Langara Island it was 1962 in which 125 measurements were missing. From the patterns of distribution of the missing data it is expected that variances at periods less than 30 days will be influenced most by its occurrence. Thus calculation of yearly averages, grand monthly averages and low frequency spectral estimates will be little affected whereas standard deviations, T,S correlations and the high frequency spectra will be affected to a degree roughly proportional to the percentage of missing data.

2. Rainfall Data

The daily precipitation data was made available on a magnetic tape provided by the Climatology Division of the Meteorological Branch of the Department of Transport. Each rainfall record on the tape was supplied with its date which was checked to ensure that the records were all sequential. This procedure yielded the occasional extra record which was simply removed. However, the rainfall records for the entire month of October 1949 were found to be missing for Quatsino (near Kains Island). This gap was filled in with the mean of the monthly averages of October 1948 and October 1950. Likewise, 3 months of missing data were filled in for Galiano Island, 2 for River Jordan, 1 for Campbell River, 2 for Denman Island, 3 for Departure Bay and 1 for Bonilla Island. Three stations had data gaps of a year or longer. These were Cape St. James which had 55 consecutive months missing, Denman Island which had 48 consecutive months missing and Departure Bay which had 14 consecutive months missing. The positions of these data gaps can be observed on the plots of the stations' respective yearly averages. Those years of missing data were not used in either the computation of monthly averages or in the spectral analysis procedures.

B. Analysis Method

The analysis method and definition of terms follows the procedure outlined in Pacific Marine Science Report 76-11 except for the spectral analysis which differs in some respects.

The yearly averages of temperature, salinity and rainfall are defined over the calendar years; monthly averages are defined over the calendar months. The temperature and salinity standard deviations are measures of the magnitudes of the temperature and salinity fluctuations of periods less than about 10 days. Likewise, the T,S correlations are calculated from the product of temperature and salinity fluctuations having periods less than 10 days.

The standard deviations of temperature and salinity and the T,S correlations are averaged for each calendar month.

The spectral analysis for 9 of the light stations was carried out on blocks of 2560 days ($\sim$ 7 years) each as was the analysis in Pacific Marine Science Report 76-11. As most of the stations were missing data up to about 1940 it was decided to use a data record 4 blocks long for all these stations which started January 4, 1942 and ended on January 16, 1970. In the case of Cape St. James the data for the year 1942 was entirely missing so for the purposes of spectral analysis only this section was replaced by data from 1935.

The data records for the remaining 8 stations were considered to be too short for spectral analysis using the 2560 day blocks. These stations were analyzed using a block size of 364 days which, being close to 1 year in length, should minimize the energy leakage from the yearly harmonic into side bands. Also because 364 factors into small prime numbers as $2^2 \times 7 \times 13$, the Fast Fourier Transform Algorithm used is quite efficient on blocks of this size. In the case of 2560 day blocks, data were passed through a low pass filter to compute spectral estimates at periods greater than or equal to a year and through a high pass filter to compute the higher frequency estimates. However for the 364 day block analyses all the spectra were based on data passed through the high pass filter only as the yearly harmonic was approximately equal to the fundamental frequency for this block size.

Using the techniques described in Pacific Marine Science Report 76-11 coherences and phases were computed between temperature and salinity and between rainfall and salinity for a given station and also between the temperature records and salinity records for selected pairs of light stations.

The filters used prior to spectral analysis and in the determination of the standard deviations of temperature and salinity and the T,S correlations were all based on the computation of moving averages (See Pacific Marine Science Report 76-11). The amplitude attenuation caused by such a filter of length Δ at frequency f was incorrectly determined as:

$$A(f) = \frac{\sin(\pi f \Delta)}{\pi f \Delta}$$

which is the form appropriate to moving averages on a continuous process. The correct form to be applied to a discrete data series is given in (Godin, 1972) as:

$$A'(f) = \frac{\sin(\pi f \Delta)}{\Delta \sin(\pi f)}$$

The application of the incorrect expression to correct this spectra for the filter attenuation is estimated to result in errors of not more than 0.1% in the worst case. The shape of the attenuation curve for the high pass

filter (based on Δ = 7 days) used to calculate the standard deviations and the T,S correlations is little different for the continuous case and the discrete case. Thus, the standard deviations and T,S correlations are still representative of variations at periods shorter than 10 days.

C. Presentation of Results Method

Monthly and yearly averaged temperatures, salinities and rainfall rates; standard deviations of temperature and salinity; and the T,S correlations are plotted in the same fashion as are those in report Pacific Marine Science Report 76-11.

As in Pacific Marine Science Report 76-11 the power spectra of temperatures and salinities are plotted as log (fP(f)) vs. log f where f is frequency and P(f) is the power spectral density. Coherences and phases are both plotted linearly against log f. For each of the coherence plots the level of the expected noise coherence is indicated appropriate to the size and the number of data blocks analyzed for each station. The computed coherence between two completely uncorrelated noise signals would cluster around this "expected level of noise coherence". It should be noted that the coherence plots in Pacific Marine Science Report 76-11 indicate a "level of significance" which is always greater than or equal to the expected noise coherence. The expected noise coherence and the level of significance are both defined mathematically in that report.

In the plots of phases, a positive phase means salinity leads temperature (or rainfall). When coherences were computed between the temperatures and salinities of pairs of light stations, the second named light station in the legend for the plot leads the first if the phase is positive.

IV. DISCUSSION OF RESULTS

A. Low Frequency Analysis

Plots of the yearly averages of temperature, salinity and rainfall are shown in Figures 2 to 7 . Yearly averages were computed only for those years for which the data was fairly complete.

1. Temperature

Even though the average temperatures vary considerably between the light stations the yearly fluctuations show a considerable correspondence. The magnitude of the yearly fluctuations are all of the order of 1°F (0.6°C). Also, the directions of the fluctuations are similar; the periods 1940 to 1942 and 1958 to 1968 are relatively warm all along the coast whereas 1955 to 1956 tended to be somewhat cooler.

Generally the temperatures averaged over the period of the records were lowest for the stations in Group 1 which is the most northern group. Temperatures were highest for Group 4 and Group 5 which are located in the

Strait of Georgia. Average yearly temperatures in Group 1 fell in the range 46°F to 50°F (7.8°C to 10.0°C) whereas those in Groups 4 and 5 were observed to lie between 50°F and 53°F (10.0°C and 11.7°C).

2. Salinity

The yearly averages of salinity show less correspondence between stations than do the averages of temperature. Bonilla Island, Langara Island and Cape St. James, all stations removed from major sources of fresh water, show much smaller yearly salinity fluctuations than those stations in the Strait of Georgia such as Departure Bay or Cape Mudge. In fact the higher the average salinity at a station the smaller are the fluctuations in the yearly averaged salinities. A reasonable degree of correspondence does appear between the positions of the salinity fluctuations at the different stations. At all stations there is a salinity peak in 1944 after which the salinities tend to decrease at a fairly constant rate until 1970 when another large salinity peak is observed. Although 1970 is the year in which hydrometer measurements were commenced at most stations, the salinity peak in that year seems to be significant. At Departure Bay the peak is about $2°/_{oo}$ over values in nearby years even though the estimated resolution of the hydrometer is $\pm 0.3°/_{oo}$. The salinity at Kains Island, Langara Island and Amphitrite Point in the years up to 1970 was noted to decrease at a rate of about $0.4°/_{oo}$/35 years in Pacific Marine Science Report 76-11. The salinities at all the stations on the outer coast of B.C. included in Groups 1, 2 and 3 are observed to decrease at a similar rate. Although the magnitude of the salinity fluctuations in the Strait of Georgia makes any trend difficult to determine, it seems that here too on average there is a general decrease of salinities in the years up to 1970.

The existence of a correlation between the temperature and salinity fluctuations is not very obvious. However, those stations having higher average temperatures tend to have the lowest average salinities and vice versa.

3. Rainfall

The yearly averaged rainfalls plotted as inches per day show considerable variation between stations. Some stations show a certain degree of correlation between their fluctuations but others apparently do not. For some stations there appears to be a slight increase in precipitation over the years since 1935 but this should be regarded as statistically uncertain.

Certain of the major features in the behaviour of the average salinities are reflected in the rainfall records. Rainfalls tended to be high at most stations in the period 1967 and 1968 whereas in 1970 they had fallen to a low. On the other hand, salinities in these two periods are low and high respectively. Likewise the higher than average rainfalls of 1943 and 1951 appear to be associated with lower than average salinities. Conversely, temperatures and rainfall do not appear to be correlated to any significant extent.

B. Spectral Analysis Results

1. Temperature and Salinity Spectra Coherences and Phases

Temperature and salinity spectra and the coherences and phases between temperature and salinity were computed for each of the 17 light stations. The results plotted together for each of the 5 groups of light stations are shown in Figures 8 to 12. Table 3 is a summary of the size of the blocks, the number of blocks, the starting date and the finishing date of the spectral analysis carried out for each station.

The temperature spectra are all characterized by a large peak at a period of one year which represents the seasonal heating and cooling of the water surface. It should be noted that the first seven spectral estimates in each spectrum cover frequencies over one elemental band width only. Since the elemental band width is about 7 times wider for the 364 day block than it is for the 2560 day block the energy in the yearly harmonic is included in an average over a wider band width; thus the temperature energy density appears to be smaller than it would be for the larger block size. In most parts of the spectra where the energy density changes slowly with frequency relative to the elemental band widths the analyses using the two block sizes give equivalent energy densities.

Above the yearly harmonic the temperature spectra are fairly flat. Bonilla Island, Langara Island, Cape St. James, Kains Island, Sheringham Point, Amphitrite Point, and McInnes Island, all stations on the outer coast of B.C., have similar spectral levels. Pine Island and Race Rocks, however, both have spectra which are significantly lower than the previous group. The highest spectral levels were observed at those stations within the Strait of Georgia. Although for most of the stations a local spectral peak was observed at a period of 14 days, this peak was much more pronounced for those stations within Groups 4 and 5.

Like the temperature spectra, the salinity spectra at periods shorter than one year tended to be fairly flat although the shapes of the two kinds of spectra differed somewhat. The salinity spectra show a great deal more variation in shape and level between stations than do the temperature spectra. All of the spectra exhibit a spectral peak at a period of 1 year but the intensity of this peak both with respect to other stations and with respect to the spectral estimates at higher frequencies varied considerably. The lowest salinity spectral levels were observed at Bonilla Island, Langara Island, Cape St. James, Pine Island, Sheringham Point and Race Rocks whereas the highest were observed in Group 4, stations in the southern part of the Strait of Georgia. Amphitrite Point, which has a temperature spectrum similar to that of Sheringham Point, has a salinity spectrum at least a decade higher. Furthermore, all the spectra except for Amphitrite Point show a larger or smaller local peak at a period of 14 days.

Temperature-salinity (T,S) coherences will be considered to be significant in a part of the spectrum if the majority of the coherences in that part tend to lie above the level of noise coherence indicated on each plot. Also, when the coherences are insignificant their phases tend to be scattered between 180° and -180°.

At periods greater than a year the T,S coherences at all the light stations could probably be considered to be insignificant. The coherences at the yearly frequency generally jump to the highest values they achieve in the whole coherency spectrum. At higher frequencies the coherences decline towards zero at a greater or lesser rate. For the majority of stations coherences are fairly significant between the annual frequency and the Nyquist frequency of the analysis. Exceptions to this behaviour are McInnes Island, Bonilla Island, Kains Island and Amphitrite Point. McInnes Island doesn't seem to be coherent at any frequency; Bonilla Island is coherent only for frequencies having periods near 14 days; Kains Island is coherent only for periods less than 7 days; and for Amphitrite Point coherences dropped below the noise coherence level for periods less than 14 days. Where the T,S coherences were significant they tended to indicate that temperature and salinity were 180° out of phase. However, for periods shorter than 7 days temperature tended to be in phase with salinity at Kains Island. The stations in Group 4 show a pronounced T,S coherence peak at periods near 14 days. Egg Island and the stations of Group 5 show a similar but slightly smaller peak at the same frequencies.

2. Rainfall and Salinity Coherences and Phases

Figure 13 to 15 show plots of the coherences and phases between salinities at the light stations and precipitation measured at associated observing stations. Each figure shows these results for 2 geographical groups of stations. Table 4 gives the location of the associated precipitation observations and the size of blocks, the number of blocks, the starting date and the ending date for each analysis. It should be noted that the size and the number of blocks used in the precipitation-salinity (R,S) analysis are not necessarily the same as those used in the temperature-salinity analysis.

The R,S coherences for most stations are not much above the level of the noise coherences. The coherences are largest for periods of a year or more, then they drop rapidly towards higher and higher frequencies. The four light stations appearing to have essentially insignificant coherences at most periods less than a year were Egg Island, Pine Island, Sheringham Point and Cape Mudge. The R,S coherences for Kains Island are maintained at levels in excess of 0.75 for periods down to 20 days before they start to fall. At all frequencies the coherences for this station are well in excess of the estimated noise coherence level. The phase relationship between rainfall and salinity also undergoes a relatively smooth transition as frequency is increased. Starting at nearly 180° ahead of rainfall at low frequencies the salinity phases lead the rainfall phases by progressively smaller and smaller angles until at a period of approximately 10 days the two quantities are in phase. At still higher frequencies the rainfall leads the salinity. In contrast Bonilla Island exhibits fairly low coherences at the lowest frequencies of analysis which increase to a maximum at periods around 14 days. The R,S coherences at higher frequencies, although they drop somewhat, are still well above the expected noise coherences. At the lowest frequencies for which the rainfall and salinity relationship is significant, rainfall and salinity are 180° out of phase with one another. The phase lead of salinity over rainfall drops to about 100° at the highest frequency of analysis.

3. Temperature and Salinity Coherences and Phases between Pairs of Light Stations

Figure 16 to 22 show plots of the coherences and phases between temperatures and salinities observed at different light stations. A list of light station pairs for which this analysis was done is given in Table 5. Figures 16 to 21 show the results of the analysis for pairs of light stations in proximity to one another whereas Figure 22 shows the results for 4 pairs of light stations more widely separated.

For most of the pairs of lighthouses in proximity to one another the coherences between temperatures (T,T coherences) are in excess of 0.8 for periods greater than a year. Even for the case of the stations further removed from one another shown in Figure 22 the T,T coherences at the lowest frequencies are observed to be in excess of 0.6. The coherences at the annual frequency are all very high in most cases being close to 1.0. For all the pairs of light stations the T,T coherences drop towards 0.0 at frequencies higher than the annual frequency. In some cases, primarily for those pairs of light stations on the outer coast of B.C., the drop in T,T coherence begins at frequencies a little above the annual frequency. The T,T coherences between stations in the Strait of Georgia, conversely, tend to remain fairly high for periods longer than 14 days after which they begin to drop more rapidly. Also, for those pairs of light stations for which there are significant coherences the T,T phases for periods longer than 14 days tend to cluster around 0°. At higher frequencies the T,T phase relationships change. For example, towards the highest frequency of analysis the phase of Entrance Island temperature lags that of Departure Bay by increasing amounts.

The S,S coherences behave similarly to the T,T coherences in that they are generally high at low frequencies, highest at the annual frequency and then tend to drop towards 0 at a rate which depends on the light station pair being considered. Stations which maintain the highest T,T coherences also maintain the highest S,S coherences. However, in almost all cases the S,S coherences are significantly lower. Although they are still quite significant over most frequencies, the S,S coherences between stations in the Straits of Georgia show the most pronounced decreases from the corresponding T,T coherences. Furthermore, the S,S coherences between the majority of lighthouse station pairs drop to the level of the noise coherence around period of 14 days but this is not generally true for the T,T coherences.

The S,S phases are considerably more scattered than the T,T phases, partly reflecting the lower S,S coherences. At the lower frequencies the S,S phases do tend to cluster near zero but at higher frequencies their behaviours are often quite different from those of temperature. For example, whereas the temperatures tend to remain within 45° of one another at Pine Island and Kains Island for most frequencies, the S,S phases are observed to be around 135° or more out of phase with one another at periods less than 14 days. On the other hand the T,T phases and S,S phase relationships are similar to one another for other lighthouse station pairs such as Departure Bay and Entrance Island.

C. Monthly Means

Shown plotted in Figures 23 to 28 are 2 cycles of the monthly means for temperature, salinity and rainfall. Indicated on each plot are the years of data over which the averages were taken.

1. Temperature

The monthly averaged temperatures all displayed a strong seasonal cycle although the magnitude of the cycle varied between stations. At the outer coast stations of Groups 1, 2 and 3 this annual variation ranged between the lowest observed for Pine Island which was 5°F (3°C) up to a variation of 13°F (7°C) observed at Egg Island. On the other hand, the lowest annual temperature variation in the Strait of Georgia light stations was 14°F (8°C) observed at Cape Mudge and the highest was 21°F (12°C) observed at Departure Bay. The shape of the seasonal temperature cycle is roughly sinusoidal for all the stations. Temperatures are near their minima in the period January to March whereas maximum temperatures occur in the months July and August.

2. Salinity

The shape and magnitude of the annual salinity variation differs much more from station to station than do the temperature results. First, the shape of the salinity curve is not very sinusoidal; many of the stations exhibit more than one salinity maximum in a year's period. Bonilla Island, Langara Island, Cape St. James, Pine Island, Race Rocks and Sheringham Point, all stations on the outer coast of B.C. show small seasonal variations in salinity of less than 1°/₀₀. Most of these stations show 2 salinity minima in a year, one around January and the other around July. The remaining stations exhibit more marked seasonal salinity cycles which range in magnitude from 1°/₀₀ to 9°/₀₀. Some of these stations have salinity maxima in the summer and their minima in winter whereas the others have a summer minimum and a winter maximum. Kains Island and Amphitrite Point, both stations on the west coast of Vancouver Island, fall into the former group by having their highest salinities in August and their lowest salinities in December. Conversely, Egg Island together with all the stations in the Strait of Georgia in Groups 4 and 5 have their lowest salinities in July and their highest in the period between November and April. In addition, both Departure Bay and Cape Mudge indicate a local salinity minimum in December. Active Pass Low Water and Active Pass High Water show somewhat different seasonal cycles from one another. Figure 5 shows that the two years of data available from Active Pass Low Water happened to be years of particularly low salinity so it is felt that most of the difference between the monthly means between the two stations is due to yearly variations.

3. Rainfall

The monthly averaged precipitations in all cases show a strong seasonal dependence. Maximum precipitations tend to occur in October for the most northerly stations of Group 1 and later in the year in December for those stations situated around Vancouver Island. Minimum precipitations, which in all cases occur in July, are several times smaller than the maximum rates.

D. Standard Deviations of Salinity and Temperature; T,S Correlations

Figures 29 to 34 show plots of the monthly averaged standard deviations of temperature and salinity and of the monthly averaged T,S correlations. All of the light stations exhibit a pronounced seasonal cycle in their temperature standard deviations. These are highest during the summer generally reaching their maxima in July. Also, a secondary maximum in the temperature standard deviations appears around January for most stations. The standard deviations for Sheringham Point undergo considerable fluctuation from one month to the next. Since there is only one year of data available for this station it is felt that these fluctuations may not be representative of the seasonal cycle of temperature standard deviations.

Like the temperature standard deviations, the salinity standard deviations show a strong seasonal dependence. The behaviour of the latter correlates to a considerable extent with the monthly averaged salinities. Stations having a smaller seasonal range of salinities tend to have a low level of salinity standard deviations and vice versa. Furthermore those stations having summer salinity maxima such as Kains Island and Amphitrite Point exhibit the lowest salinity standard deviations in that season. Likewise, high summer standard deviations are associated with those stations exhibiting a summer minimum of salinity. Cape Mudge, which has two salinity minima during the year, correspondingly shows two maxima in the salinity standard deviations, one in summer and one in winter.

For most stations the T,S correlations have their largest magnitudes during the summer when they are negative. During the summer warmer water seems to be associated with lower salinities. In general the winter T,S correlations are positive, but the magnitude of these correlations is most often smaller than the summer correlations. Kains Island and Amphitrite Point, however, have winter and summer T,S correlations of similar magnitude.

V. SUMMARY AND CONCLUSIONS

Pickard and McLeod (1953) discuss the temperature and salinity data collected from twelve light stations along the British Columbia coast for 13 years from 1935 to 1948. The results of the 9 stations which are common to that report and the present report are entirely consistent.

Pickard and McLeod divided their twelve light stations into three groups, namely, a Northern Group which included stations from Langara Island to Pine Island; a West Coast Group which included Kains Island and Amphitrite Point; and a Georgia Strait Group which included 3 stations within Georgia Strait itself as well as Race Rocks. Each of these 3 groups was shown to have a degree of internal similarity in its temperature and salinity characteristics.

The yearly averaged temperatures at all the 17 stations along the coast discussed in the present study were found to vary in much the same manner suggesting that long term temperature changes are caused by large

scale meteorological phenomena. The average monthly temperatures at all the stations undergo a strong seasonal cycle caused by the variation in insolation during the year. Most of the stations on the outer coast showed average seasonal temperature variations of between 9°F (5°C) and 13°F (7°C) whereas most of those in the Strait of Georgia had somewhat higher ranges of 17°F (9°C) to 21°F (12°C). Pickard and McLeod suggest that this is because the waters of the Strait of Georgia are less subject to upwelling and wave mixing processes which would hinder the development of a warm surface layer during the summer. Cape Mudge and Race Rocks located near the northern and southern ends of the Strait of Georgia respectively show smaller annual temperature ranges than do the other stations in the Strait. According to Pickard and McLeod, both these stations are situated in areas where turbulent water movements would be expected to mix the upper waters of the Strait of Georgia close to homogeneity. Properties such as temperature averaged over a portion of the water column are expected to be less variable than are observations made near the water surface. Of the outer coast stations, Pine Island has an abnormally low seasonal temperature range of 5°F (3°C). Perhaps the water type here is primarily vertically well mixed water which has flowed northwest into Queen Charlotte Strait from the turbulent passages of Johnston Strait.

Unlike those of temperature, the magnitudes of the fluctuations of yearly averaged salinity differ considerably between the stations. These fluctuations are smallest for Langara Island and Cape St. James which are situated adjacent to the Queen Charlotte Islands and largest for the Strait of Georgia stations. The major features of the averaged salinity fluctuations are, however, reflected in all the stations along the B.C. coast. Furthermore, these features appear to be correlated to a certain extent with yearly rainfalls in that years which have abnormally high rainfalls tend to have lower salinities, and vice versa. In Pacific Marine Science Report 76-11 it was noted that the averaged salinity at 3 outer stations gradually decreased over the years at a rate of approximately 0.4°/$_{oo}$/35 years. Such a rate of decrease was found to be consistent with the observations in the present study including those from stations within the Strait of Georgia. This salinity decrease may be associated with a slight increase in precipitation over the same period.

For most stations the salinities show a marked seasonal variation. Amphitrite Point and Kains Island, both stations on the west coast of Vancouver Island, have a summer salinity maximum and a winter minimum. Pickard and McLeod attribute this behaviour partly to northwest winds causing the upwelling of saline water during the summer and partly to the runoff along that coast achieving a maximum in winter. In contrast, all the stations in the Strait of Georgia and Egg Island exhibit a salinity minimum in summer and a maximum in winter. It would appear that these stations are influenced primarily by the maximum runoffs which result from the snowmelts in July. Two of the stations in the Strait of Georgia, Departure Bay and Cape Mudge indicate a second, smaller salinity minimum in January which probably arises from the peak in precipitation around that time. The other stations included in the present study show much smaller seasonal variation of salinity indicating either their distance from a major source of fresh water or the intensity of turbulent processes in their vicinity which would tend to destroy the formation of a relatively fresh surface layer during any season of the year.

The magnitude of the energy in the temperature spectra varies somewhat between stations. The largest part of this energy occurs in the summer when the water column is expected to be most thermally stratified. In contrast, the salinity spectra show a much larger variation between stations than do the temperature spectra. It seems that stations having the largest annual salinity variations also have the most energy in the higher frequency salinity fluctuations. Since energy in the high frequency salinity fluctuations is greatest in those seasons having the lower salinities it is concluded that these times of the year have the greatest salinity stratifications near the surface. Almost all the temperature and salinity spectra show a local peak at a period of 14 days. Herlinveaux (1957) has postulated that this peak is associated with the two weekly cycle of tidal intensities. It is conjectured that every two weeks when tidal currents are near their maxima tidal mixing is also highest which in turn results in the surface layer being mixed through a greater depth. Thus in the summer, for example, during this part of the tidal cycle, surface salinities tend to be higher and temperatures lower than during the alternate parts of the cycle. In areas where the tidal mixing might be expected to be particularly intense such as in Active Pass, coherences between temperature and salinity are high at a period of 14 days.

Generally speaking the coherences between temperatures and salinities at pairs of light stations are high for periods greater than or equal to the annual frequency. At periods less than a year these coherences drop off at rates which depend on the locations and proximity of the lighthouse station pairs.

Coherences between rainfall and salinity for periods less than a year were most often insignificant or slightly significant. Bonilla Island and Kains Island were the only two stations which showed fairly high coherences between rainfall and salinity.

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Table 1

Summary of Geographical Locations of Data Availability for Temperature, Salinity and Rainfall Observations

Geographical Group	Station	Observed Parameters*	Latitude N	Longitude W	Available Data Duration	Date of Change of Salinity Determination	Distance between Precipitation and T,S Observations (nautical miles)
1) Northern B.C. Coast	Langara Island	T,S	54°15'	133°03'	Nov.1936-Aug.1937 Mar.1940-end of 1973	Sept.1969	0
	" "	R	"	"	Jul.1936-end of 1972		
	Bonilla Island	T,S	53°30'	130°38'	Apr.1960-end of 1973	Nov. 1969	0
	" "	R	"	"	Apr.1960-end of 1972		
	Cape St. James	T,S	51°56'	131°01'	Aug.1934-June 1971 with some gaps	June 1971	0
	" "	R	"	"	Aug.1925-end of 1972 with some gaps		
	McInnes Island	T,S	52°16'	128°43'	Aug.1954-end of 1973	Nov. 1969	-
	Egg Island	T,S	51°15'	127°50'	Mar.1970-end of 1973	July 1971	0
	" "	R	"	"	Dec.1965-end of 1972		
2) Central B.C. Coast	Pine Island	T,S	50°58'	127°44'	Jan.1937-end of 1973	Dec.1969	25
	Port Hardy	R	50°41'	127°22'	Feb.1944-end of 1972		
	Kains Island	T,S	50°27'	128°02'	Jan.1935-end of 1973	Feb. 1970	18
	Quatsino	R	50°32'	127°37'	June 1895-end of 1972		
	Amphitrite Point	T,S	48°55'	125°32'	Sept.1934-end of 1973	Feb. 1970	0
	" "	R	"	"	Jan. 1958-end of 1972		
3) Southern Vancouver Island	Sheringham Point	T,S	48°23'	123°55'	May 1968-March 1970	all salinometer	6
	River Jordan	R	48°25'	124°03'	Jan.1908-Sept. 1972		
	Race Rocks	T,S	48°18'	123°32'	May 1941-end of 1973	April 1970	12
	Gonzales Hts.	R	48°25'	123°19'	Aug.1898-end of 1972		

Table 1 (Cont'd.)

Geographical Group	Station	Observed Parameters	Latitude N	Longitude W	Available Data Duration	Date of Change of Salinity Determination	Distance between Precipitation and T,S Observations (nautical miles)
4) Southern Strait of Georgia	Active Pass	T,S	48°52'	123°17'	Feb.1967-Feb.1970	July 1969	3
	Low Water Galiano Island	R	48°52'	123°21'	Feb.1956-end of 1972		
	Active Pass	T,S	48°52'	123°17'	Feb.1967-end of 1973	August 1969	3
	High Water Galiano Island	R	48°52'	123°21'	Feb.1956-end of 1972		
	Entrance Island	T,S	49°13'	123°48'	June 1936-end of 1973	Jan. 1970	6
	Departure Bay	R	49°13'	123°57'	Jan.1913-end of 1972		
	Departure Bay	T,S	49°13'	123°57'	Oct.1914-July 1932	July 1969	0
	" "	R	"	"	June 1934-end of 1973 Jan.1913-end of 1972		
5) Northern Strait of Georgia	Chrome Island	T,S	49°28'	124°41'	April 1961-end of 1973	Sept. 1969	7
	Denman Island	R	49°32'	124°49'	Aug.1906-Dec. 1965		
	Sisters Island	T,S	49°29'	124°26'	May 1968-end of 1973	Sept. 1969	
	Cape Mudge	T,S	50°00'	125°12'	Jan.1937-end of 1973	Aug. 1969	4
	Campbell River	R	50°01'	125°18'	Feb.1936-May 1969		

* T - temperature
S - salinity
R - rainfall

Table 2

Summary of Missing Temperature and Salinity Records

Geographical Group	Station	Total Points	Missing T	% Missing T	Missing S	% Missing S
1	Langara Island	10240	1375	13	1478	14
	Bonilla Island	4732	320	7	328	7
	Cape St. James	10240	1769	17	1962	19
2	McInnes Island	6916	373	5	398	6
	Egg Island	728	47	6	55	8
	Pine Island	10240	284	3	397	4
	Kains Island	10240	331	3	373	4
3	Amphitrite Point	10240	751	7	876	9
	Sheringham Point	364	23	6	47	13
	Race Rocks	10240	279	3	300	3
4	Active Pass Low Water	728	13	2	39	5
	Active Pass High Water	1820	37	2	164	9
	Entrance Island	10240	85	1	199	2
	Departure Bay	10240	1789	17	1825	18
5	Chrome Island	4004	37	1	50	1
	Sisters Island	1456	14	1	18	1
	Cape Mudge	10240	859	8	912	9

Table 3

Temperature and Salinity Spectral Analysis

Group Number	Station	Spectral Block Size	Number of Blocks	Date Analysis Begins	Date Analysis Ends
1	Langara Island	2560	4	Jan.4, 1942	Jan.16,1970
	Bonilla Island	364	13	Dec.24,1960	Dec.6, 1973
	Cape St. James	2560	4	Jan.4, 1942	Jan.16, 1970
2	McInnes Island	364	19	Jan.1, 1955	Dec.6, 1973
	Egg Island	364	2	Dec.11, 1970	Dec.7, 1972
	Pine Island	2560	4	Jan.4, 1942	Jan.16, 1970
	Kains Island	2560	4	Jan.4, 1942	Jan.16, 1970
3	Amphitrite Point	2560	4	Jan.4, 1942	Jan.16, 1970
	Sheringham Point	364	1	Dec.13, 1968	Dec.11, 1969
	Race Rocks	2560	4	Jan.4, 1942	Jan.16, 1970
4	Active Pass Low Water	364	2	Dec.15, 1967	Dec.11, 1969
	Active Pass High Water	364	5	Dec.15, 1967	Dec. 7, 1972
	Entrance Island	2560	4	Jan. 4,1942	Jan. 16,1970
	Departure Bay	2560	4	Jan. 4, 1942	Jan. 16,1970
5	Chrome Island	364	11	Dec.22, 1962	Dec. 6, 1973
	Sisters Island	364	4	Dec.13, 1968	Dec. 7, 1972
	Cape Mudge	2560	4	Jan. 4, 1942	Jan. 16, 1970

Table 4

Rainfall and Salinity Coherences and Phases

Geographical Group	Light Station	Location of Precipitation Observations	Block Size	Number of Blocks	Date Analysis Begins	Date Analysis Ends
1	Langara Island	Langara Island	2560	4	Jan.4, 1972	Jan.16, 1970
	Bonilla Island	Bonilla Island	364	12	Jan.1, 1961	Dec.17, 1972
	Cape St. James	Cape St. James	2560	2	Jan. 1, 1955	Jan. 7, 1969
2	Egg Island	Egg Island	364	2	Mar. 10, 1970	Mar. 7, 1972
	Pine Island	Port Hardy	2560	1	Jan. 1, 1961	Jan. 4, 1968
	Kains Island	Quatsino	2560	5	Jan. 1, 1935	Jan. 16, 1970
3	Amphitrite Point	Amphitrite Point	364	12	Jan. 1, 1958	Dec. 16, 1969
	Sheringham Point	River Jordan	364	2	May 1, 1968	Apr. 28, 1970
	Race Rocks	Gonzales Hts.	2560	4	May 1, 1941	May 13, 1969
4	Active Pass Low Water	Galiano Island	364	3	Feb.5, 1969	Jan. 31, 1970
	Active Pass High Water	Galiano Island	364	5	Feb.5, 1967	Jan. 29, 1972
	Entrance Island	Departure Bay	2560	4	May 14, 1936	May 16, 1964
	Departure Bay	Departure Bay	2560	4	Jan. 1, 1935	Jan. 13, 1963
5	Chrome Island	Denman Island	364	3	May 5, 1962	Apr. 30, 1965
	Cape Mudge	Campbell River	2560	4	Nov. 1, 1936	Nov. 13, 1964

Table 5

T,T and S,S Coherences and Phases

Lighthouse Station Pair	Spectral Block Size	Number of Blocks	Date Analysis Begins	Date Analysis Ends
Bonilla Island - Cape St. James	364	10	Dec. 24, 1960	Dec. 11, 1970
Langara Island - Bonilla Island	364	13	Dec. 24, 1960	Dec. 6 , 1973
Langara Island - Cape St. James	2560	4	Jan. 4 , 1942	Jan. 16, 1970
McInnes Island - Egg Island	364	2	Dec. 11, 1970	Dec. 7, 1972
McInnes Island - Cape St. James	364	16	Jan. 1, 1955	Dec. 11, 1970
Bonilla Island - McInnes Island	364	13	Dec. 24, 1960	Dec. 6, 1973
Pine Island - Cape Mudge	2560	4	Jan. 4, 1942	Jan. 16, 1970
Pine Island - Kains Island	2560	4	Jan. 4, 1942	Jan. 16, 1970
Egg Island - Pine Island	364	2	Dec. 11, 1970	Dec. 7 ,1972
Pine Island - Race Rocks	2560	4	Jan. 4, 1942	Jan. 16, 1970
Langara Island - Pine Island	2560	4	Jan. 4, 1942	Jan. 16, 1970
Race Rocks - Departure Bay	2560	4	Jan. 4, 1942	Jan. 16, 1970
Departure Bay - Pine Island	2560	4	Jan. 4, 1942	Jan. 16, 1970
Active Pass Hw - Race Rocks	364	5	Dec. 15, 1967	Dec. 7, 1972
Active Pass HW - Active Pass LW	364	2	Dec. 15, 1967	Dec. 11, 1969
Entrance Island - Active Pass HW	364	5	Dec. 15, 1967	Dec. 7, 1972
Departure Bay - Entrance Island	2560	4	Jan. 4, 1942	Jan. 16, 1970
Sisters Island - Departure Bay	364	4	Dec. 13, 1968	Dec. 7, 1972
Chrome Island - Sisters Island	364	4	Dec. 13, 1968	Dec. 7, 1972
Cape Mudge - Chrome Island	364	11	Dec. 22, 1962	Dec. 6, 1973
Sheringham Point - Race Rocks	364	1	Dec. 13, 1968	Dec. 11, 1969
Amphitrite Point - Sheringham Point	364	1	Dec. 13, 1968	Dec. 11, 1969
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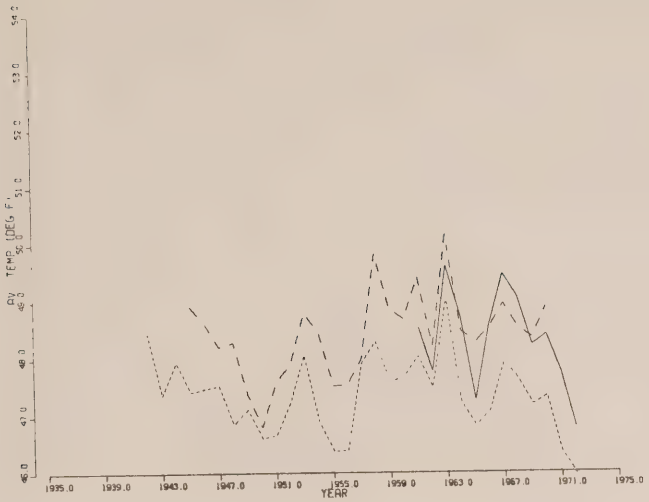
Figure 1

Map of British Columbia's coast showing locations of sampling stations.

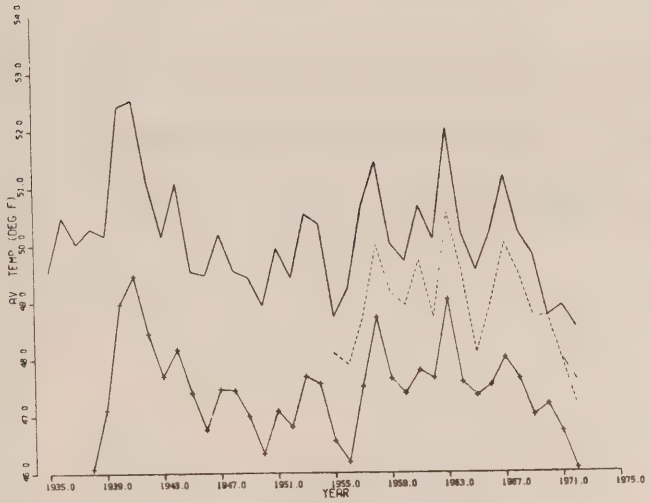

134°
132°
130°
128°W
126°
124°
122°
54°
52° N
50°
48°
Nass R
Dixon Entrance
LANGARA I
Chatham Sd
Prince Rupert Airport
Skeena R
BONILLA I
BRITISH COLUMBIA
Hecate Strait
Queen Charlotte Islands
Ocean Falls
Bella Coola R
McINNES I
C St JAMES
Queen Charlotte Sound
EGG I
PINE
Queen Charlotte Strait
Quatsino
KAINS I
PACIFIC OCEAN
Vancouver Island
Estevan Point
C MUDGE
Strait of Georgia
Vancouver Airport
CHROME I
SISTERS I
Salmon R
Alberni Inlet
DEPARTURE BAY
ENTRANCE I
Fraser R
ACTIVE PASS
AMPHITRITE Pt
Barkley Sd
RACE Rks
Juan de Fuca Strait
SHERINGHAM Pt
Washington

Figure 2

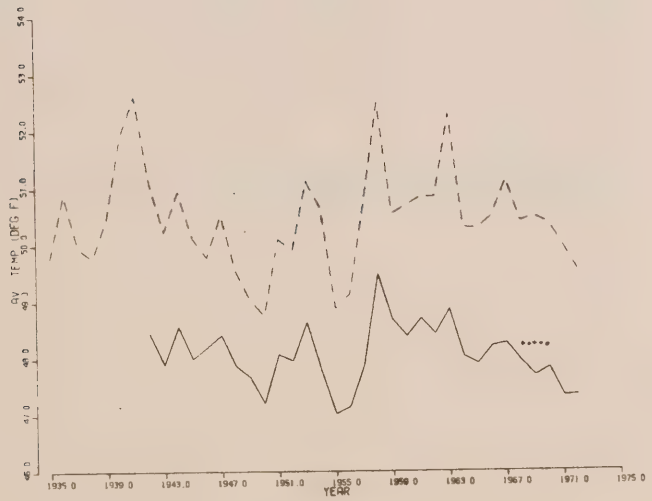
Yearly averaged temperatures for Bonilla Island, Langara Island, and Cape St. James (top); for Kains Island, McInnes Island, Egg Island, and Pine Island (centre); and for Race Rocks, Sheringham Point and Amphitrite Point (bottom).



BONILLA ISLAND (1961-1972)
LANGARA ISLAND (1942-1972)
CAPE ST. JAMES (1943-1972)



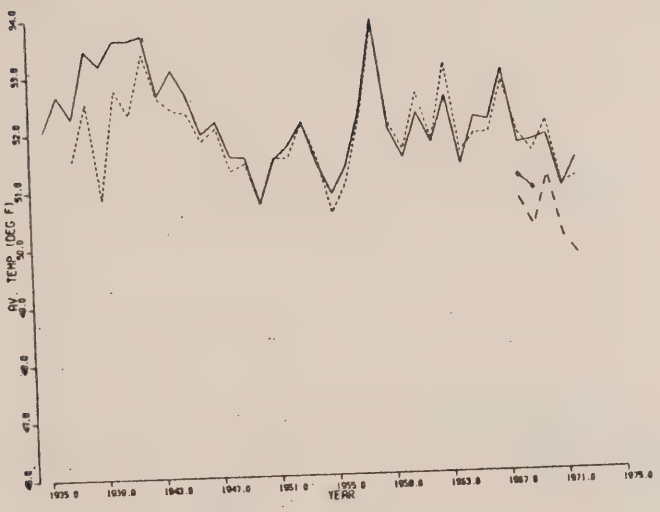
KAINS ISLAND (1935-1972)
MCINNES ISLAND (1955-1972)
EGG ISLAND (1971-1972)
PINE ISLAND (1938-1972)

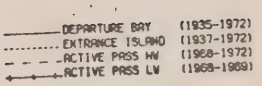


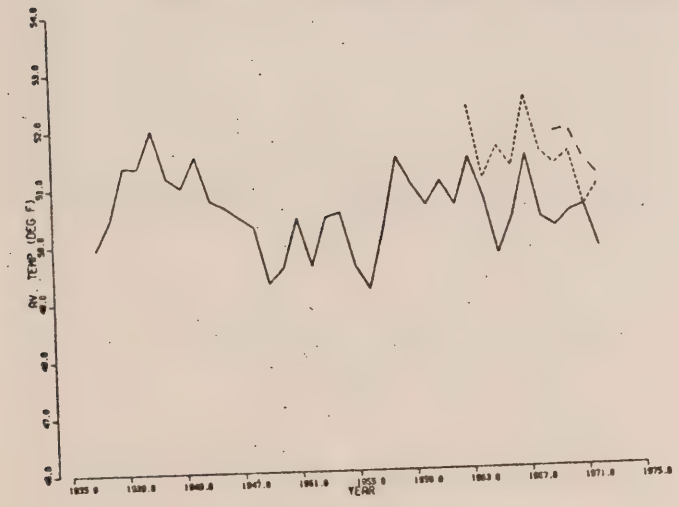
RACE ROCKS (1942-1972)
SHERINGHAM POINT (1969-1969)
AMPHITRITE POINT (1935-1972)

Figure 3

Yearly averaged temperatures for Departure Bay, Entrance Island, Active Pass High Water and Active Pass Low Water (top) and for Cape Mudge, Chrome Island, and Sisters Island (bottom).


AV. TEMP (DEG F)
54.0
53.0
52.0
51.0
50.0
49.0
48.0
47.0
46.0
1935.0
1939.0
1943.0
1947.0
1951.0
1955.0
1959.0
1963.0
1967.0
1971.0
1975.0
YEAR


DEPARTURE BAY (1935-1972)
ENTRANCE ISLAND (1937-1972)
ACTIVE PASS HW (1968-1972)
ACTIVE PASS LW (1968-1969)


AV. TEMP (DEG F)
54.0
53.0
52.0
51.0
50.0
49.0
48.0
47.0
46.0
1935.0
1939.0
1943.0
1947.0
1951.0
1955.0
1959.0
1963.0
1967.0
1971.0
1975.0
YEAR

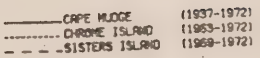
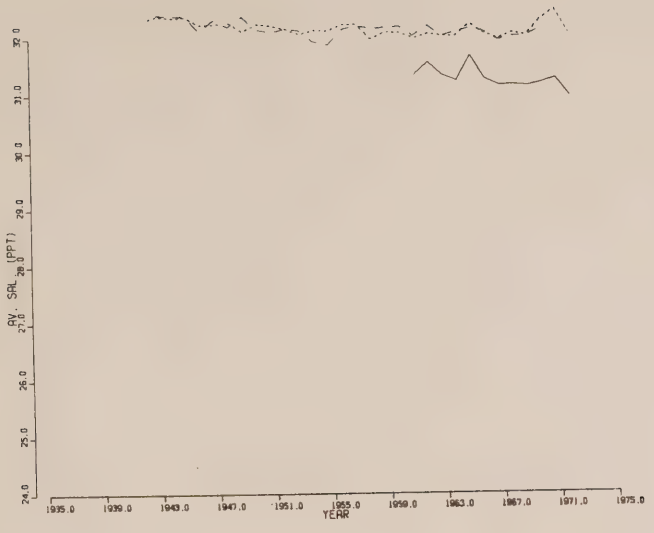
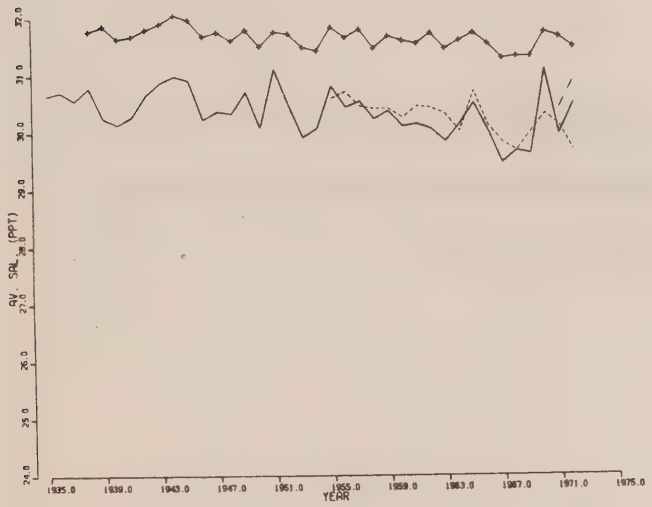

CAPE MUDGE (1937-1972)
CHROME ISLAND (1963-1972)
SISTERS ISLAND (1969-1972)

Figure 4

Yearly averaged salinities for Bonilla Island, Langara Island and Cape St. James (top); for Kains Island, McInnes Island, Egg Island and Pine Island (centre); and for Race Rocks, Sheringham Point, and Amphitrite Point (bottom).


AV. SAL (PPT)
YEAR
BONILLA ISLAND (1961-1972)
LANGARA ISLAND (1942-1972)
CAPE ST. JAMES (1943-1972)


AV. SAL (PPT)
YEAR
KAINS ISLAND (1935-1972)
MCINNES ISLAND (1955-1972)
EGG ISLAND (1971-1972)
PINE ISLAND (1938-1972)

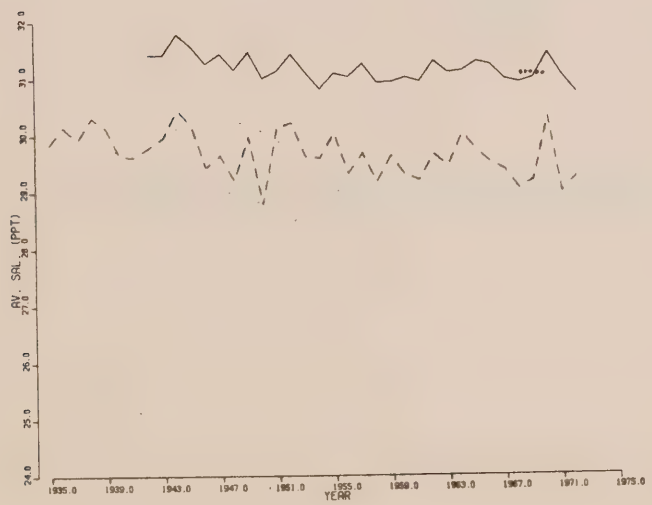
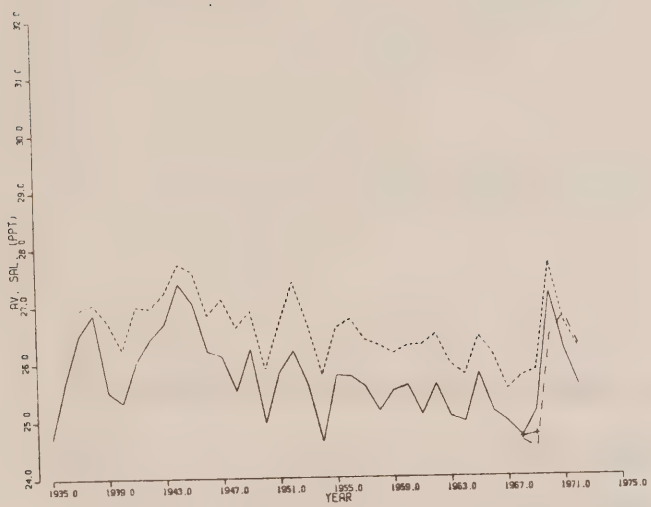
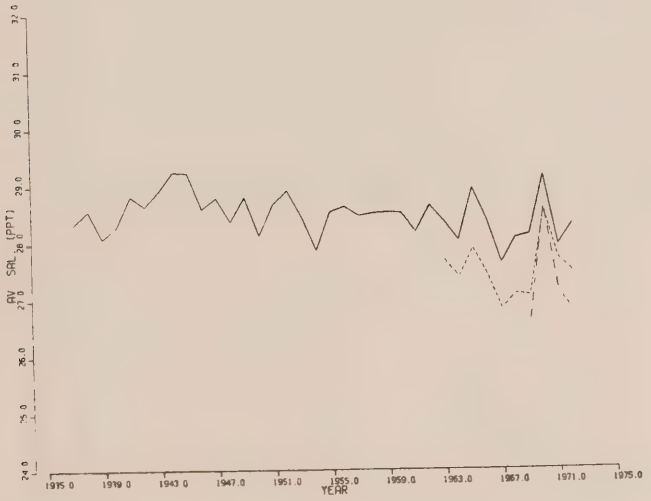

AV. SAL (PPT)
YEAR
RACE ROCKS (1942-1972)
SHERINGHAM POINT (1969-1969)
AMPHITRITE POINT (1935-1972)

Figure 5

Yearly averaged salinities for Departure Bay, Entrance Island, Active Pass High Water and Active Pass Low Water (top) and for Cape Mudge, Chrome Island and Sisters Island (bottom).



DEPARTURE BAY (1935-1972)
ENTRANCE ISLAND (1937-1972)
ACTIVE PASS HW (1968-1972)
ACTIVE PASS LW (1968-1969)

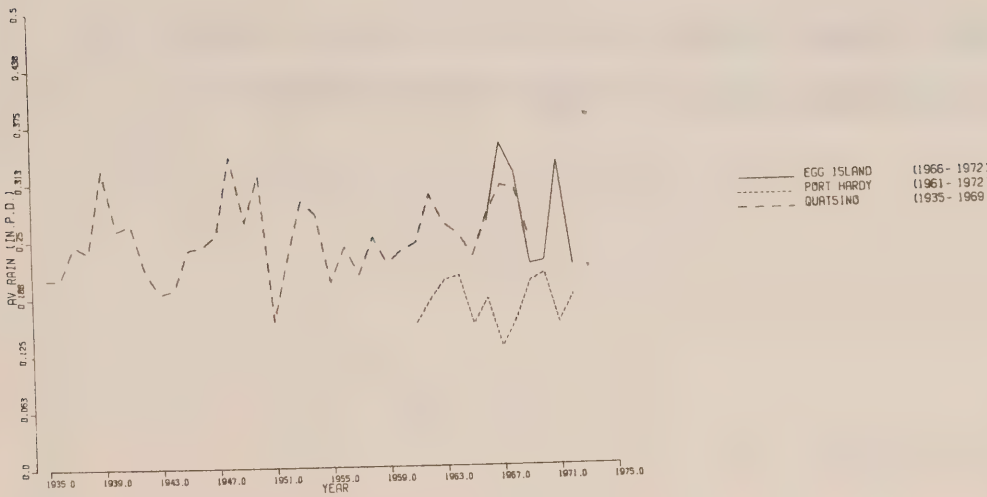


CAPE MUDGE (1937-1972)
CHROME ISLAND (1963-1972)
SISTERS ISLAND (1969-1972)

Figure 6

Yearly averaged rainfall for Langara Island, Bonilla Island, and Cape St. James (top); for Egg Island, Port Hardy and Quatsino (centre); and for Amphitrite Point, River Jordan, and Gonzales Heights (bottom).


AV RAIN (IN P D)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
1935.0
1939.0
1943.0
1947.0
1951.0
1955.0
1959.0
1963.0
1967.0
1971.0
1975.0
YEAR
LANGARA ISLAND (1937- 1972)
BONILLA ISLAND (1961- 1972)
CAPE ST JAMES (1935- 1965)


AV RAIN (IN.P.D.)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
1935.0
1939.0
1943.0
1947.0
1951.0
1955.0
1959.0
1963.0
1967.0
1971.0
1975.0
YEAR
EGG ISLAND (1966- 1972)
PORT HARDY (1961- 1972)
QUATSINO (1935- 1969)

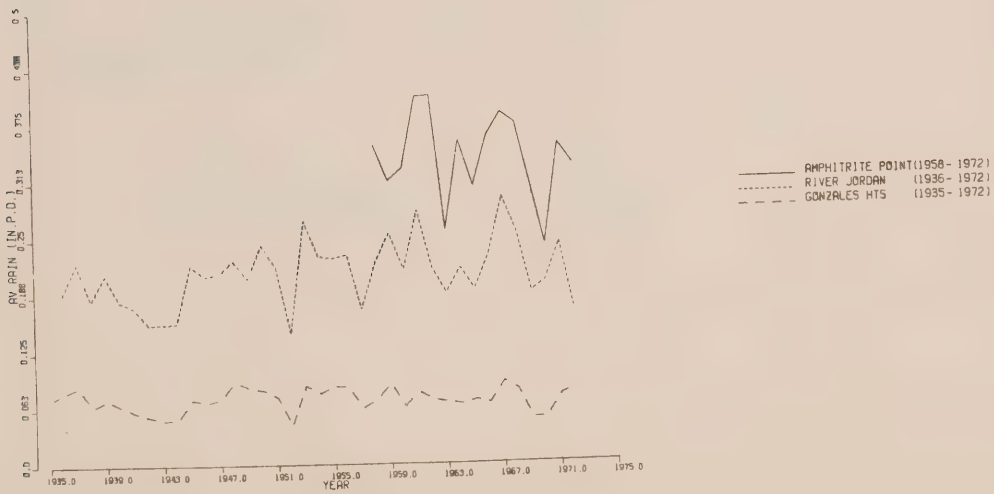
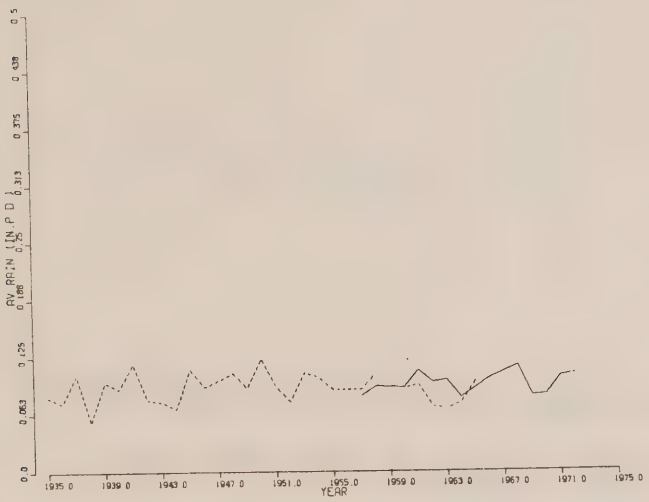

AV RAIN (IN.P.D.)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
1935.0
1939.0
1943.0
1947.0
1951.0
1955.0
1959.0
1963.0
1967.0
1971.0
1975.0
YEAR
AMPHITRITE POINT(1958- 1972)
RIVER JORDAN (1936- 1972)
GONZALES HTS (1935- 1972)

Figure 7

Yearly averaged rainfall for Galiano Island and Departure Bay (top) and for Denman Island and Campbell River (bottom).


AV. RAIN (IN. P. D.)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
1935.0
1939.0
1943.0
1947.0
1951.0
1955.0
1959.0
1963.0
1967.0
1971.0
1975.0
YEAR
GALIANO ISLAND (1957 - 1972)
DEPARTURE BAY (1935 - 1965)

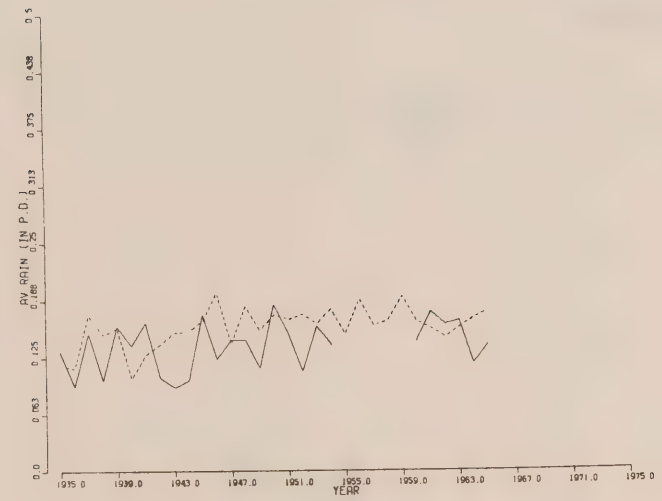
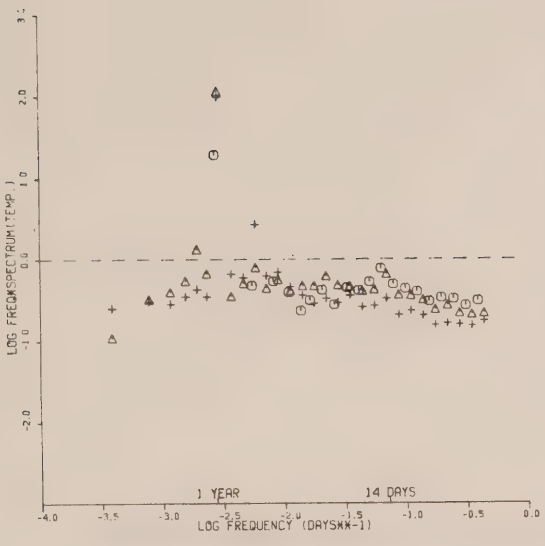
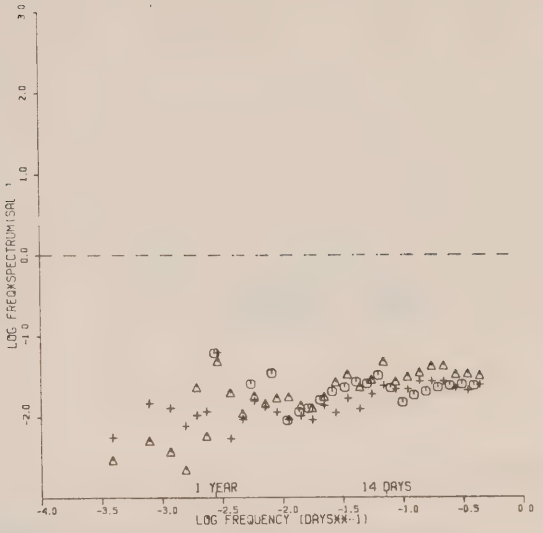

AV. RAIN (IN. P. D.)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
1935.0
1939.0
1943.0
1947.0
1951.0
1955.0
1959.0
1963.0
1967.0
1971.0
1975.0
YEAR
DENMAN ISLAND (1935 - 1965)
CAMPBELL RIVER (1935 - 1965)

Figure 8

Temperature power spectra (upper left), salinity power spectra (upper right), temperature-salinity coherences (lower left) and temperature-salinity phases (lower right) for Bonilla Island, Langara Island and Cape St. James.

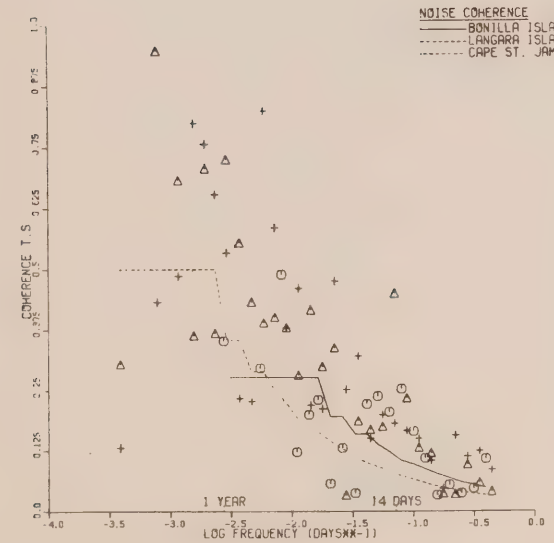




⊙ BONILLA ISLAND (13 364 DAY BLOCKS)

△ LANGARA ISLAND (4 2560 DAY BLOCKS)

\+ CAPE ST. JAMES (4 2560 DAY BLOCKS)



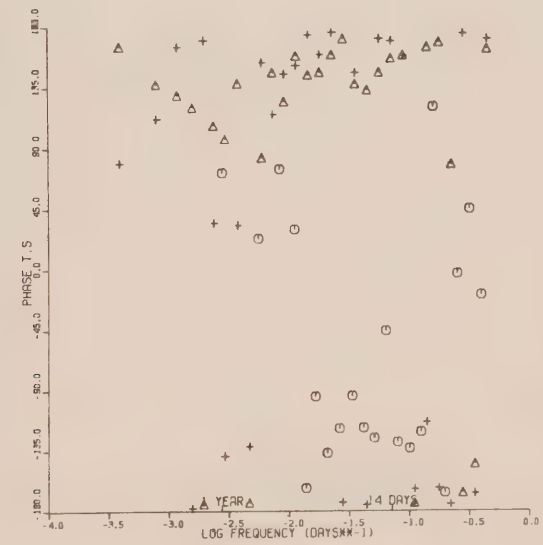
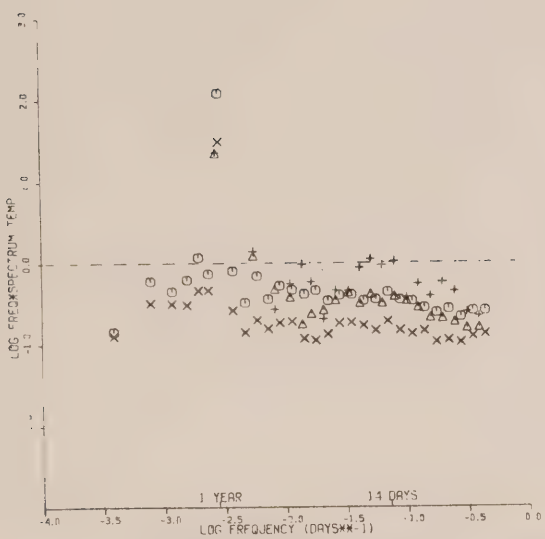
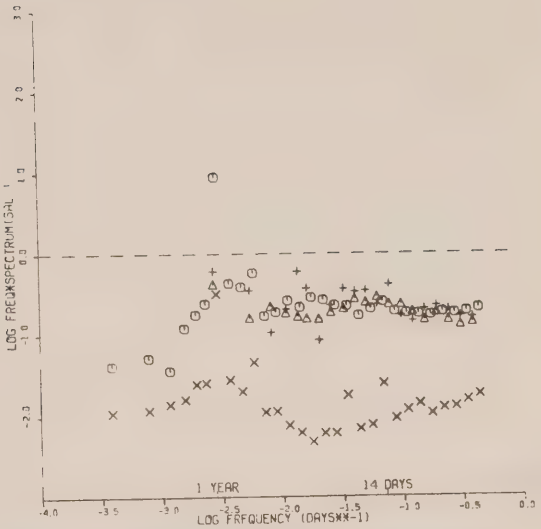


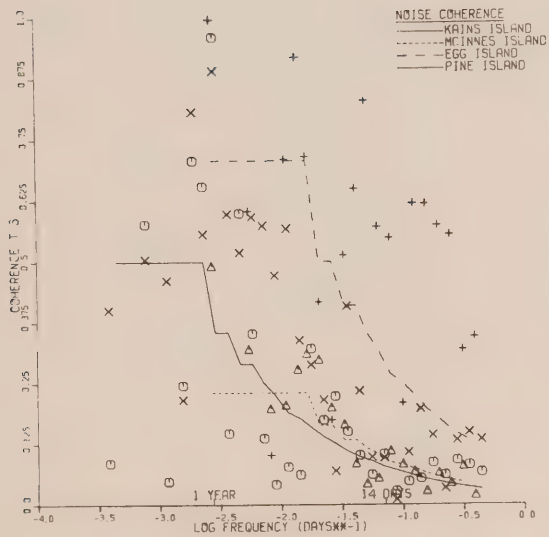
Figure 9

Temperature power spectra (upper left), salinity power spectra (upper right), temperature-salinity coherences (lower left), and temperature-salinity phases (lower right) for Kains Island, McInnes Island, Egg Island and Pine Island.





○ KAINS ISLAND (4 2560 DAY BLOCKS)
△ MCINNES ISLAND (19 364 DAY BLOCKS)
+ EGG ISLAND (2 364 DAY BLOCKS)
× PINE ISLAND (4 2560 DAY BLOCKS)



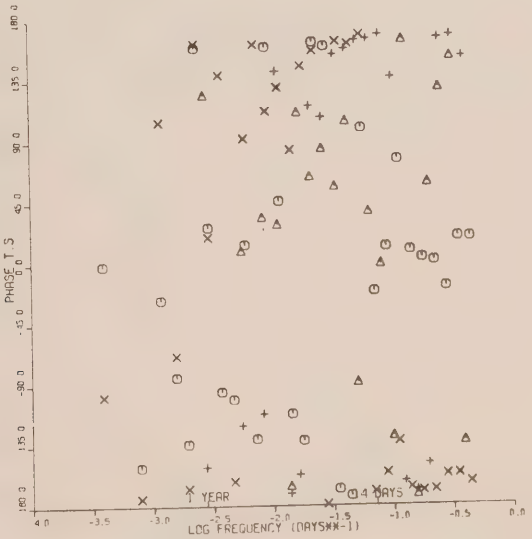
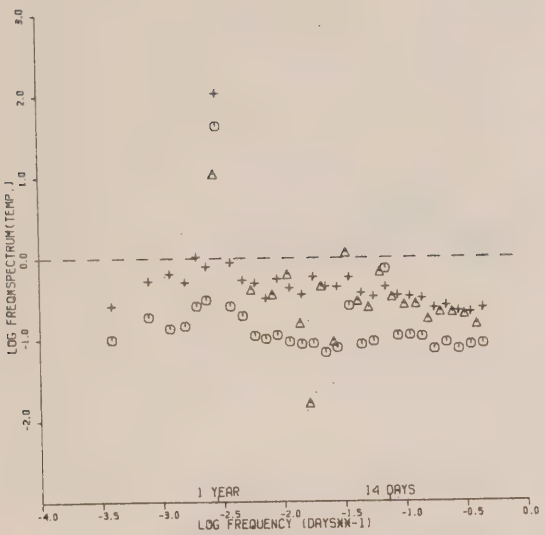
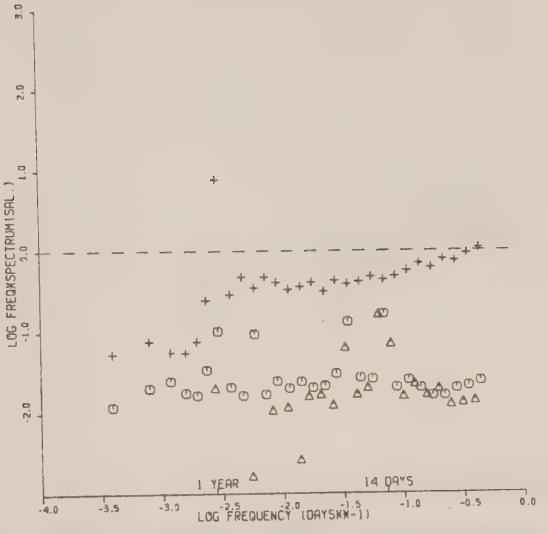


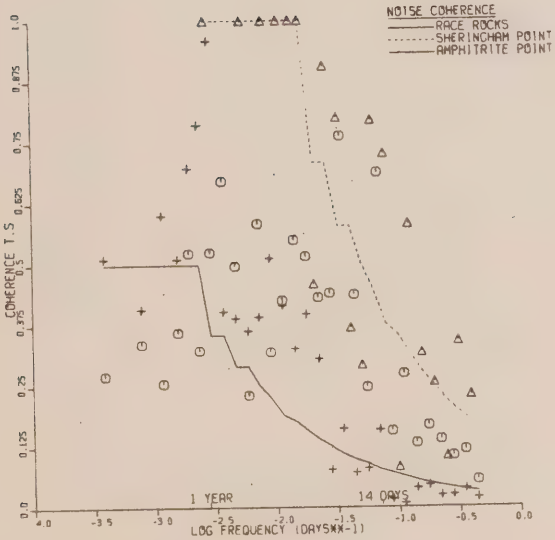
Figure 10

Temperature power spectra (upper left), salinity power spectra (upper right), temperature-salinity coherences (lower left) and temperature-salinity phases (lower right) for Race Rocks, Sheringham Point, and Amphitrite Point.





○ RACE ROCKS (4 2560 DAY BLOCKS)
△ SHERINGHAM POINT (1 364 DAY BLOCKS)
+ AMPHITRITE POINT (4 2560 DAY BLOCKS)



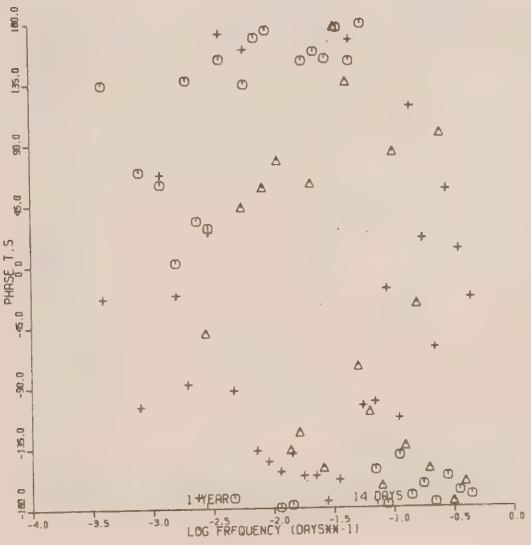
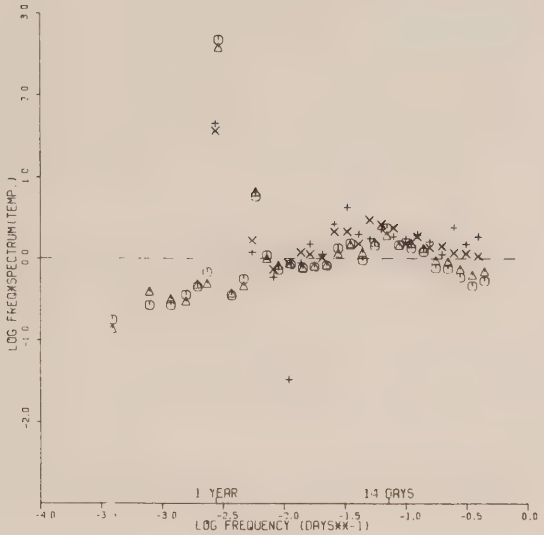
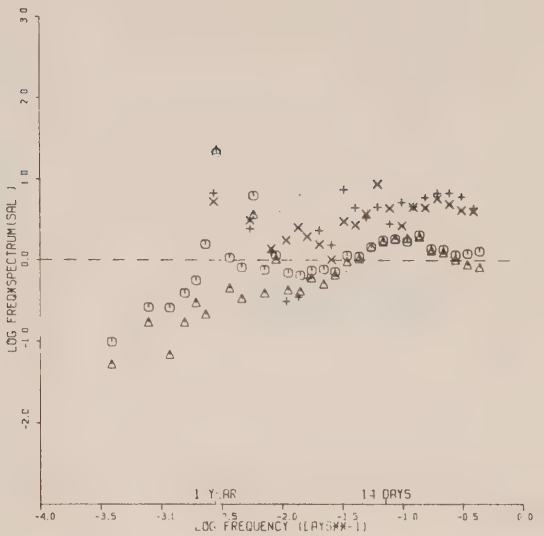


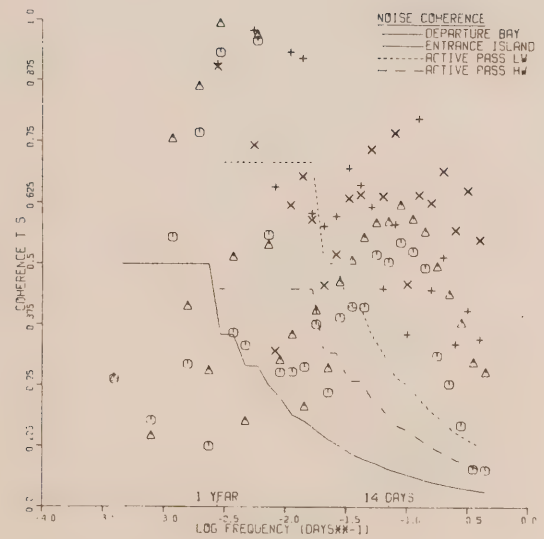
Figure 11

Temperature power spectra (upper left), salinity power spectra (upper right), temperature-salinity coherences (lower left) and temperature-salinity phases (lower right) for Departure Bay, Entrance Island, Active Pass Low Water and Active Pass High Water.





○ DEPARTURE BAY (4 2560 DAY BLOCKS)
△ ENTRANCE ISLAND (4 2560 DAY BLOCKS)
+ ACTIVE PASS LW (2 364 DAY BLOCKS)
× ACTIVE PASS HW (5 364 DAY BLOCKS)



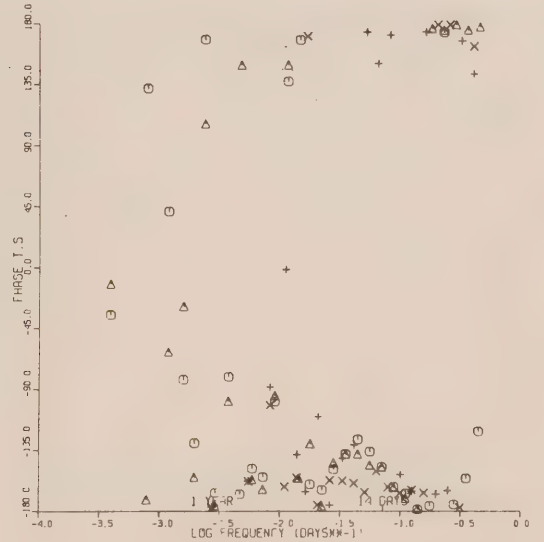
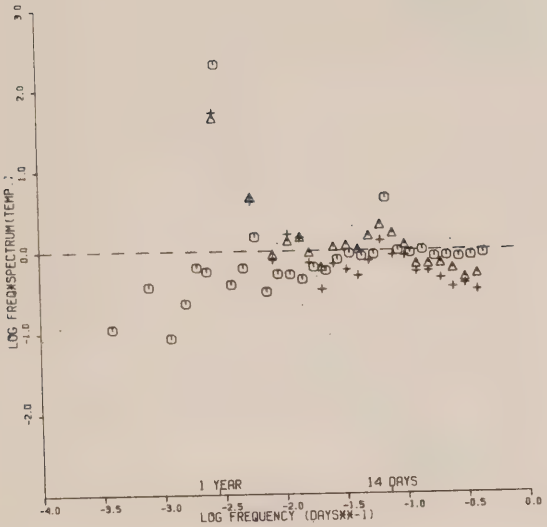
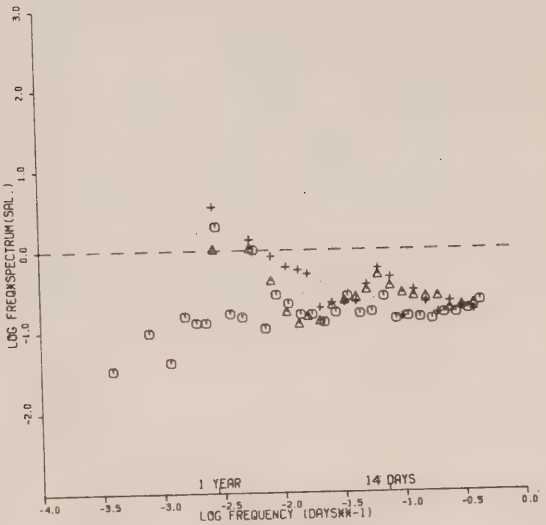


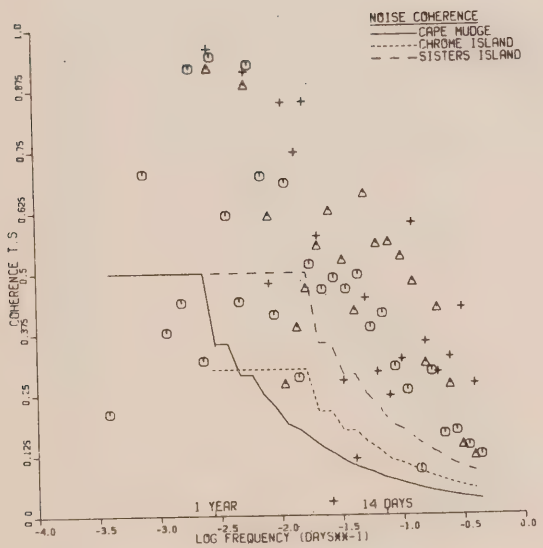
Figure 12

Temperature power spectra (upper left), salinity power spectra (upper right), temperature-salinity coherences (lower left) and temperature-salinity phases (lower right) for Cape Mudge, Chrome Island and Sisters Island.





⊙ CAPE MUDGE (4 2560 DAY BLOCKS)
△ CHROME ISLAND (11 364 DAY BLOCKS)
+ SISTERS ISLAND (4 364 DAY BLOCKS)



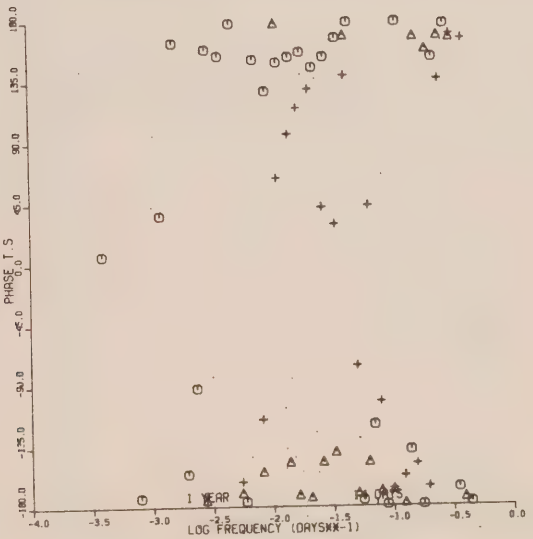
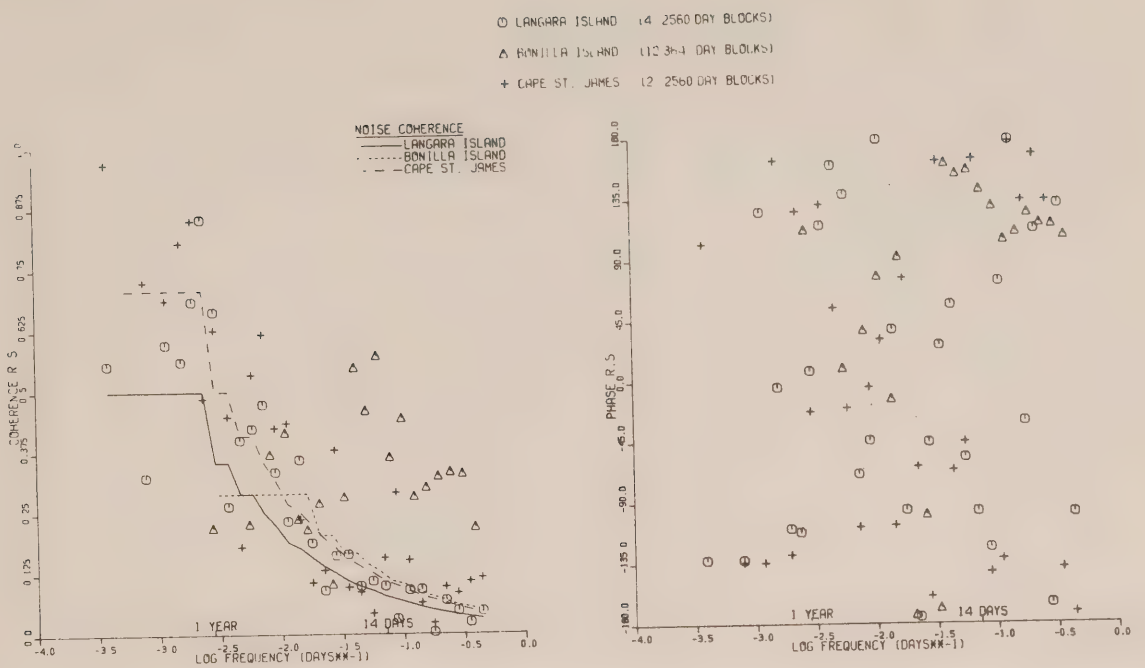


Figure 13

Rainfall-salinity coherences and phases for Langara Island, Bonilla Island, and Cape St. James (top) and for Egg Island, Pine Island, and Kains Island (bottom).


LANGARA ISLAND (4 2560 DAY BLOCKS)
BONILLA ISLAND (12 364 DAY BLOCKS)
CAPE ST. JAMES (2 2560 DAY BLOCKS)
NOISE COHERENCE
LANGARA ISLAND
BONILLA ISLAND
CAPE ST. JAMES
COHERENCE R.S
PHASE R.S
1 YEAR
14 DAYS
LOG FREQUENCY (DAYS**-1)

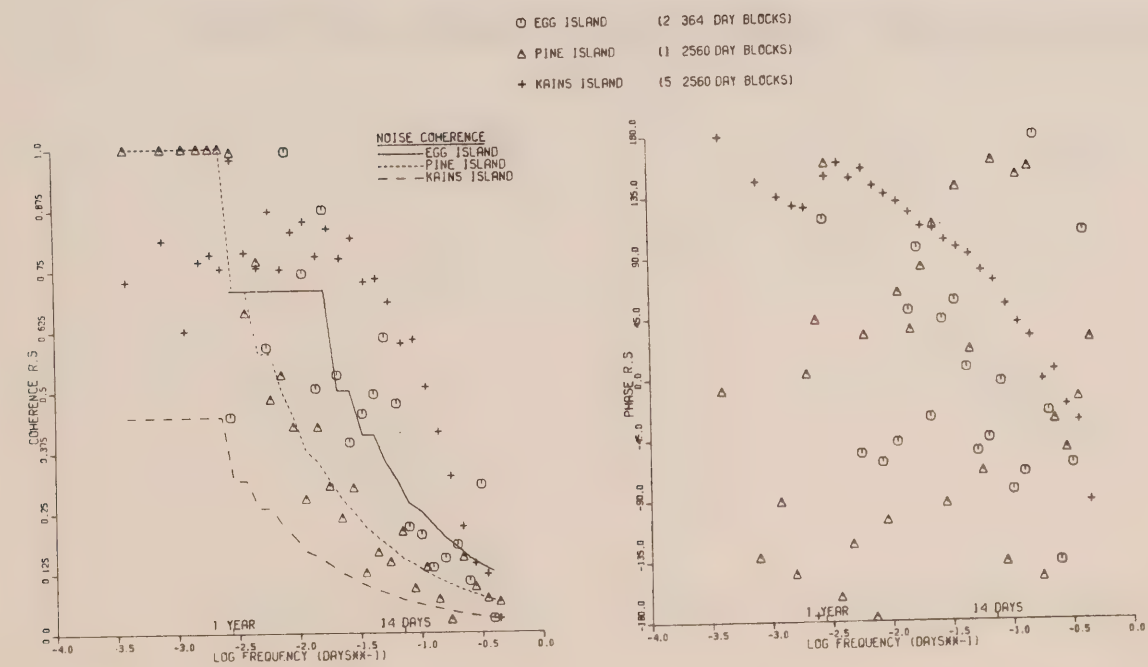
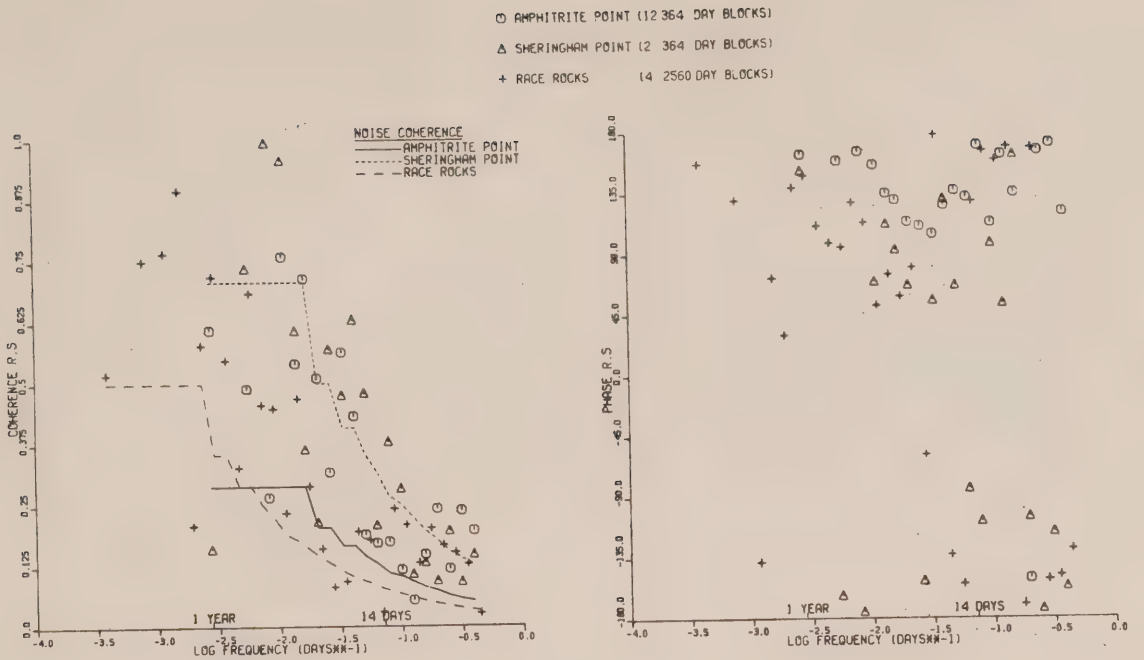

EGG ISLAND (2 364 DAY BLOCKS)
PINE ISLAND (1 2560 DAY BLOCKS)
KAINS ISLAND (5 2560 DAY BLOCKS)
NOISE COHERENCE
EGG ISLAND
PINE ISLAND
KAINS ISLAND
COHERENCE R.S
PHASE R.S
1 YEAR
14 DAYS
LOG FREQUENCY (DAYS**-1)

Figure 14

Rainfall-salinity coherences and phases for Amphitrite Point, Sheringham Point and Race Rocks (top) and for Active Pass High Water, Active Pass Low Water, Entrance Island and Departure Bay (bottom).


○ AMPHITRITE POINT (12 364 DAY BLOCKS)
△ SHERINGHAM POINT (2 364 DAY BLOCKS)
+ RACE ROCKS (4 2560 DAY BLOCKS)
NOISE COHERENCE
AMPHITRITE POINT
SHERINGHAM POINT
RACE ROCKS
COHERENCE R.S
PHASE R.S
1 YEAR
14 DAYS
LOG FREQUENCY (DAYS**-1)

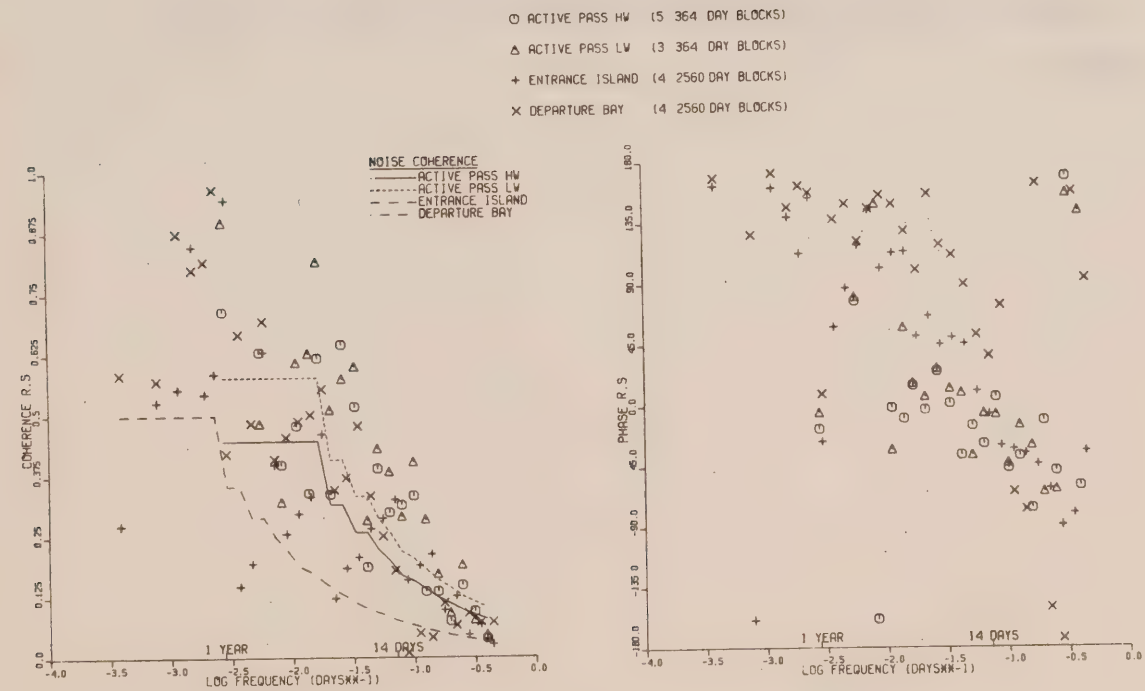

○ ACTIVE PASS HW (5 364 DAY BLOCKS)
△ ACTIVE PASS LW (3 364 DAY BLOCKS)
+ ENTRANCE ISLAND (4 2560 DAY BLOCKS)
× DEPARTURE BAY (4 2560 DAY BLOCKS)
NOISE COHERENCE
ACTIVE PASS HW
ACTIVE PASS LW
ENTRANCE ISLAND
DEPARTURE BAY
COHERENCE R.S
PHASE R.S
1 YEAR
14 DAYS
LOG FREQUENCY (DAYS**-1)

Figure 15

Rainfall-salinity coherences and phases for Chrome Island and Cape Mudge.

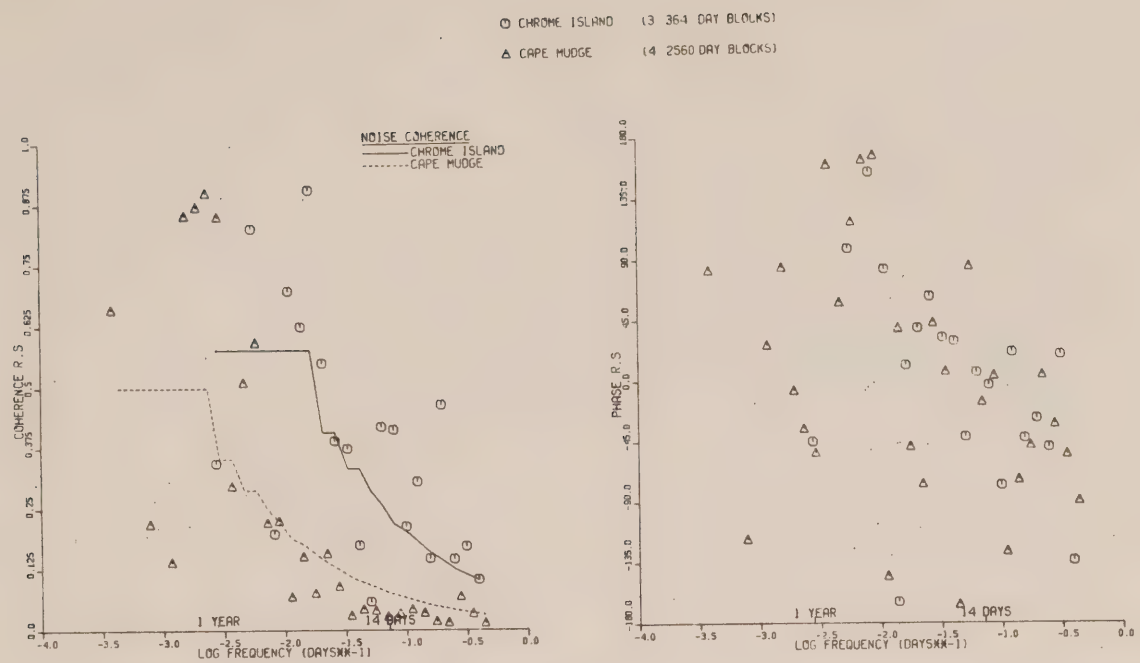
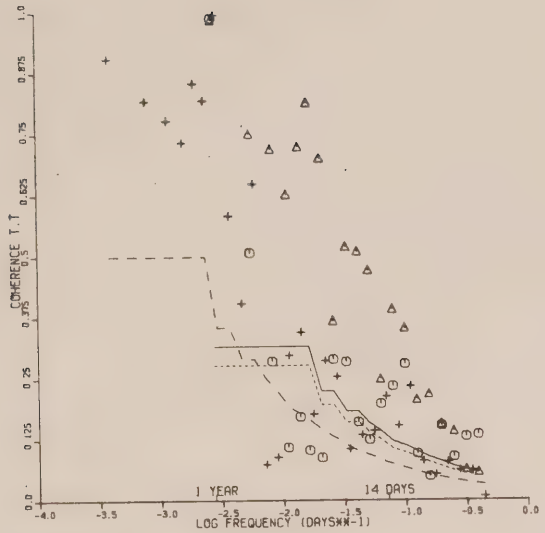
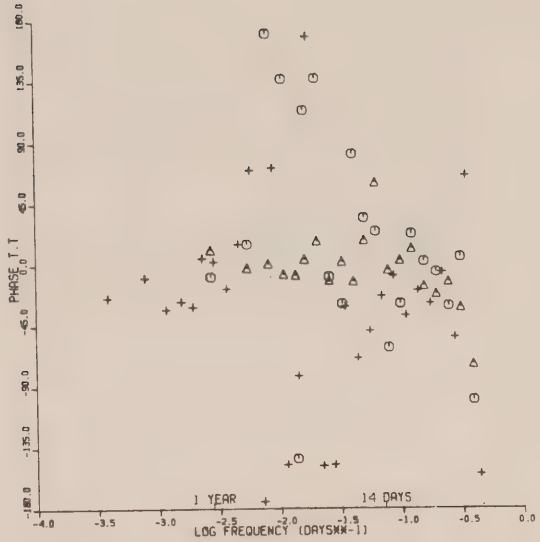

CHROME ISLAND (3 364 DAY BLOCKS)
CAPE MUDGE (4 2560 DAY BLOCKS)
NOISE COHERENCE
CHROME ISLAND
CAPE MUDGE
COHERANCE R.S
PHASE R.S
1 YEAR
14 DAYS
LOG FREQUENCY (DAYS**-1)

Figure 16

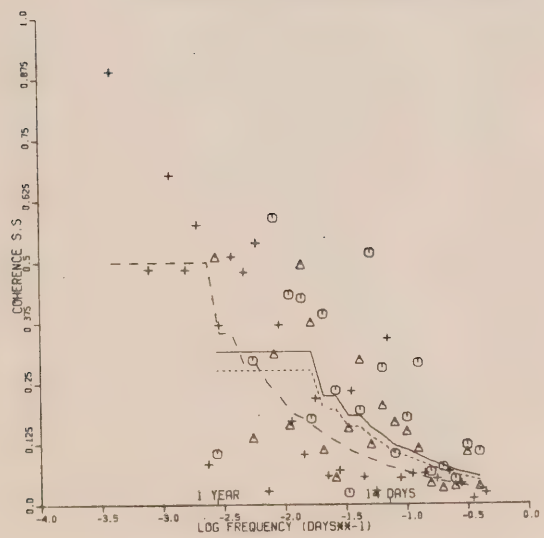
Temperature (top) and salinity (bottom) coherences and phases between 3 pairs of light stations; Bonilla Island and Cape St. James, Langara Island and Bonilla Island, Langara Island and Cape St. James.





NOISE COHERENCE
———BONILLA ISLAND - CAPE ST. JAMES
-------LANGARA ISLAND - BONILLA ISLAND
– – –LANGARA ISLAND - CAPE ST. JAMES

⊙ BONILLA ISLAND - CAPE ST. JAMES (10 364 DAY BLOCKS)
△ LANGARA ISLAND - BONILLA ISLAND (13 364 DAY BLOCKS)
\+ LANGARA ISLAND - CAPE ST. JAMES (4 2560 DAY BLOCKS)



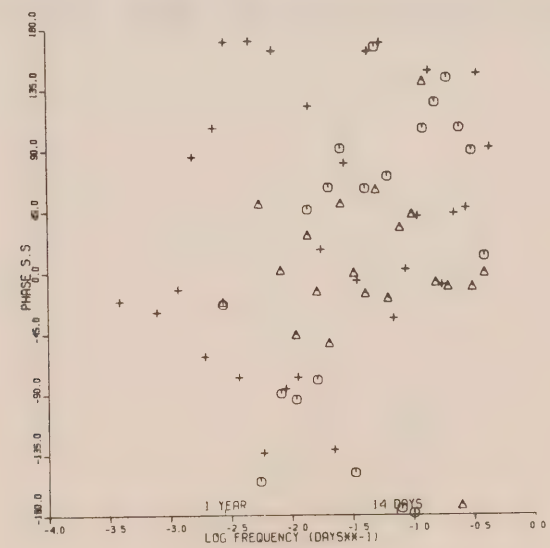
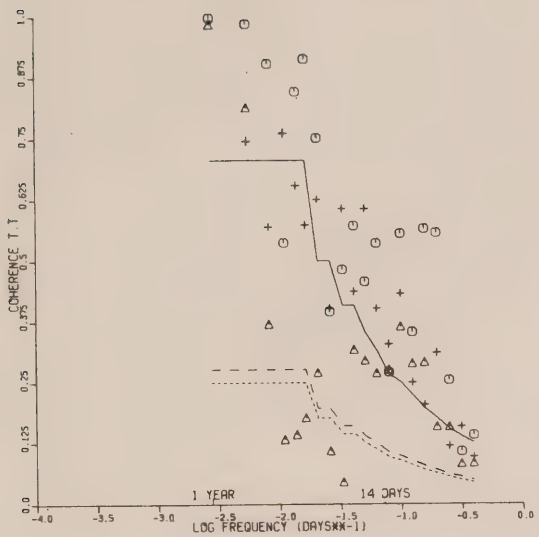
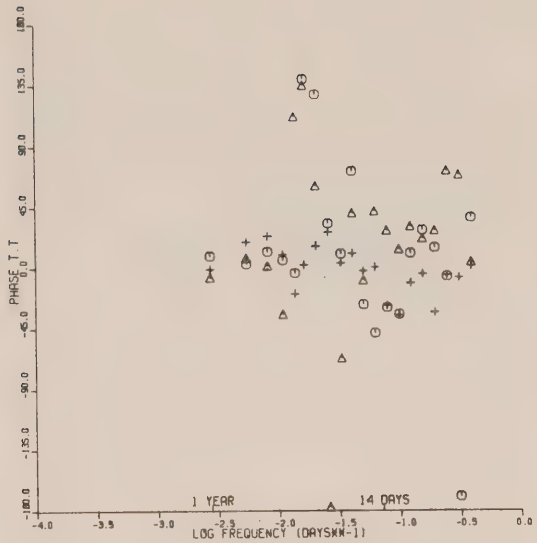


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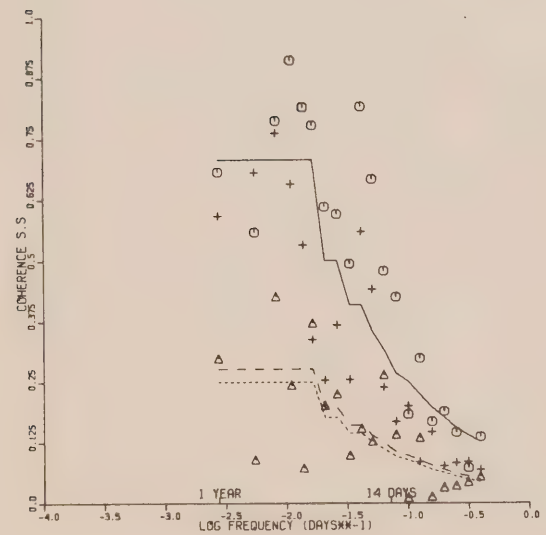
Temperature (top) and salinity (bottom) coherences and phases between 3 pairs of light stations; McInnes Island and Egg Island, McInnes Island and Cape St. James, Bonilla Island and McInnes Island.





NOISE COHERENCE
——— MCINNES ISLAND - EGG ISLAND
------ MCINNES ISLAND - CAPE ST. JAMES
– – – BONILLA ISLAND - MCINNES ISLAND

⊙ MCINNES ISLAND - EGG ISLAND (2 364 DAY BLOCKS)
△ MCINNES ISLAND - CAPE ST. JAMES (16 364 DAY BLOCKS)
\+ BONILLA ISLAND - MCINNES ISLAND (13 364 DAY BLOCKS)



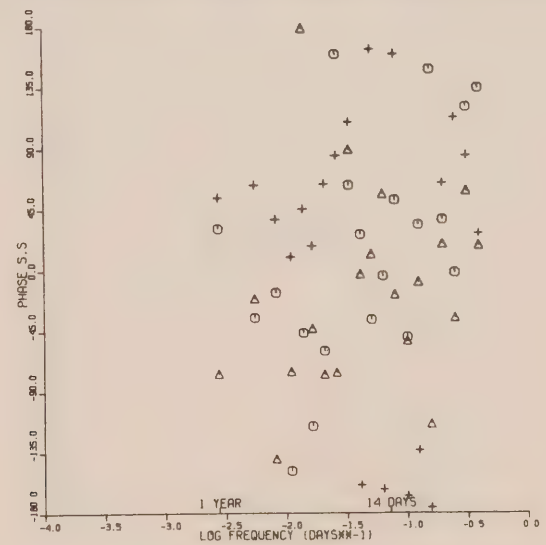
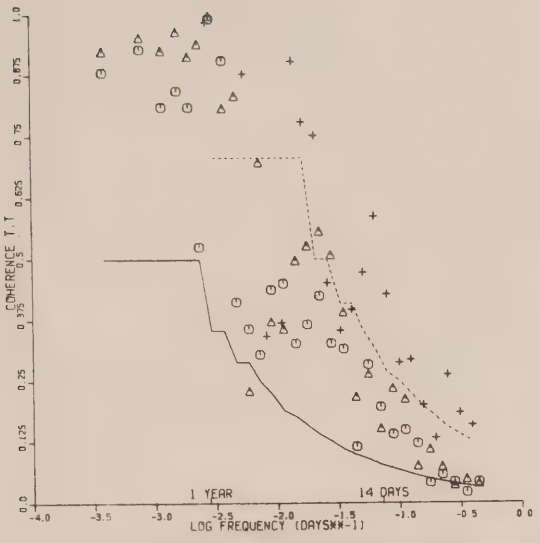
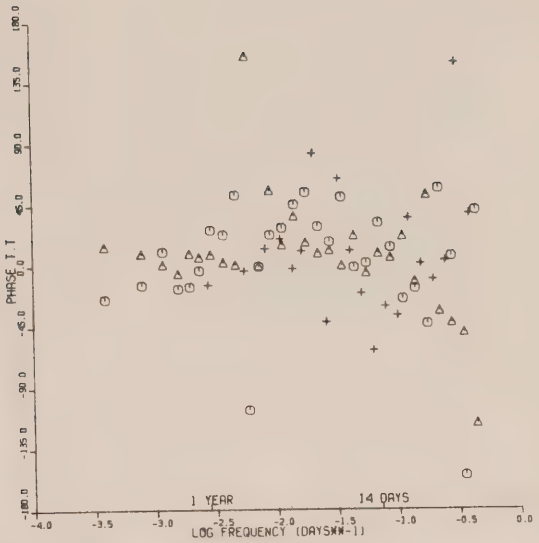


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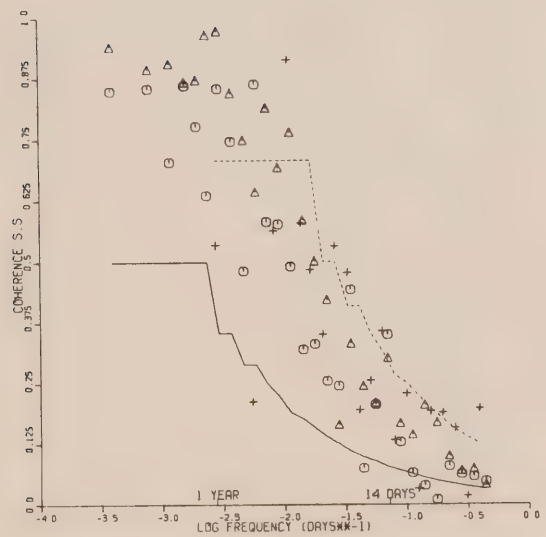
Temperature (top) and salinity (bottom) coherences and phases between 3 pairs of light stations; Pine Island and Cape Mudge, Pine Island and Kains Island, Egg Island and Pine Island.





NOISE COHERENCE
——— PINE ISLAND - CAPE MUDGE
——— PINE ISLAND - KAINS ISLAND
------- EGG ISLAND - PINE ISLAND

⊙ PINE ISLAND - CAPE MUDGE (4 2560 DAY BLOCKS)
△ PINE ISLAND - KAINS ISLAND (4 2560 DAY BLOCKS)
\+ EGG ISLAND - PINE ISLAND (2 364 DAY BLOCKS)



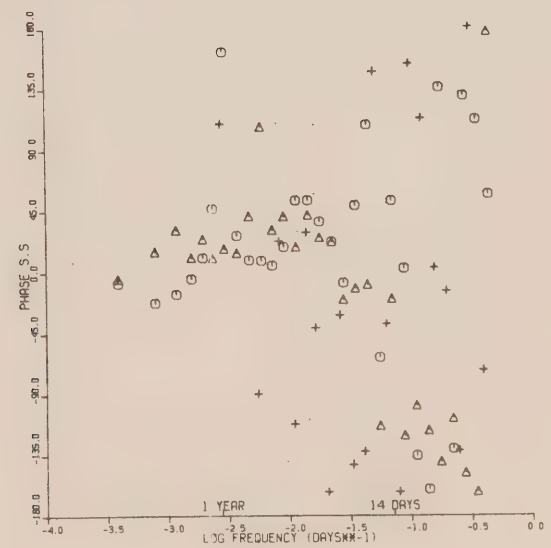
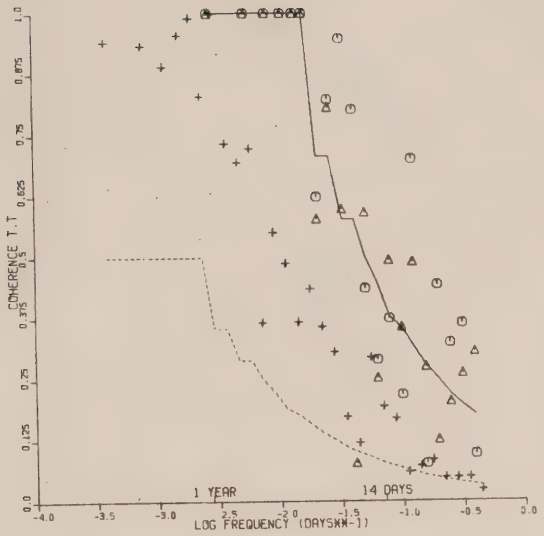
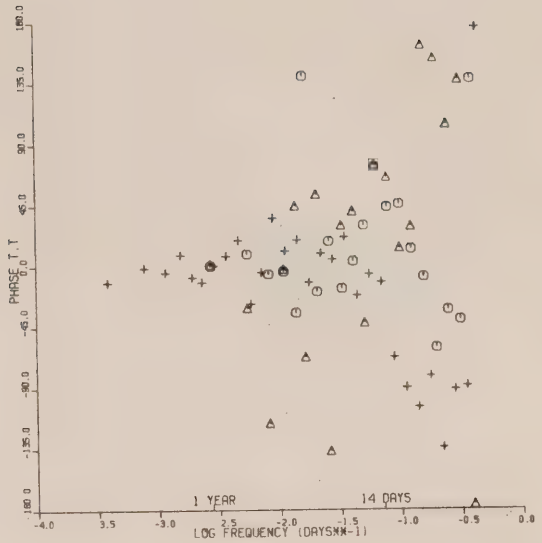


Figure 19

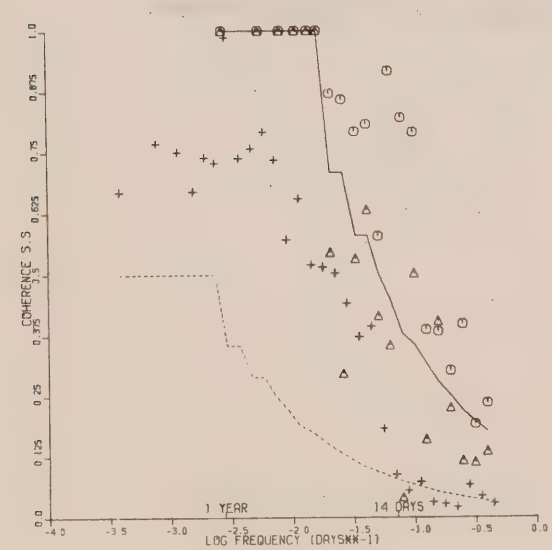
Temperature (top) and salinity (bottom) coherences and phases between 3 pairs of light stations; Sheringham Point and Race Rocks, Amphitrite Point and Sheringham Point, Kains Island and Amphitrite Point.





NOISE COHERENCE
——— SHERINGHAM POINT - RACE ROCKS
——— AMPHITRITE POINT - SHERINGHAM
------ KAINS ISLAND - AMPHITRITE POINT

⊙ SHERINGHAM POINT - RACE ROCKS (1 364 DAY BLOCKS)
△ AMPHITRITE POINT - SHERINGHAM (1 364 DAY BLOCKS)
\+ KAINS ISLAND - AMPHITRITE POINT (4 2560 DAY BLOCKS)



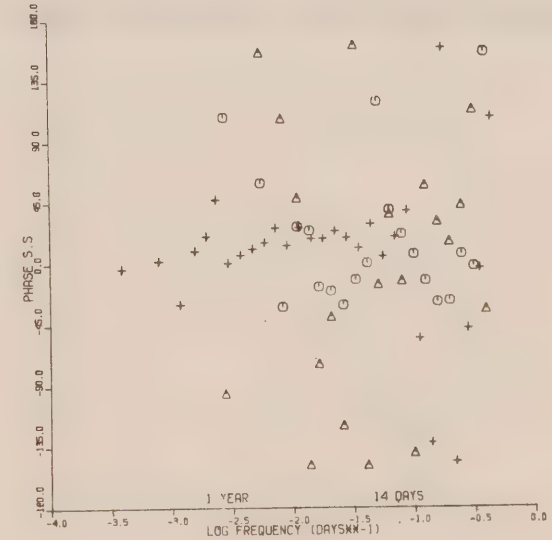
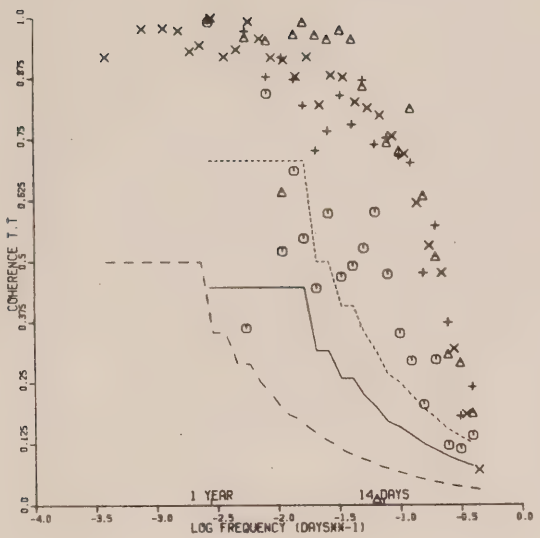
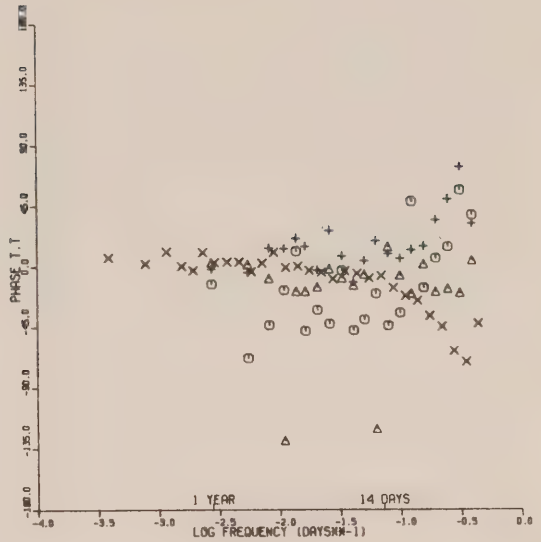


Figure 20

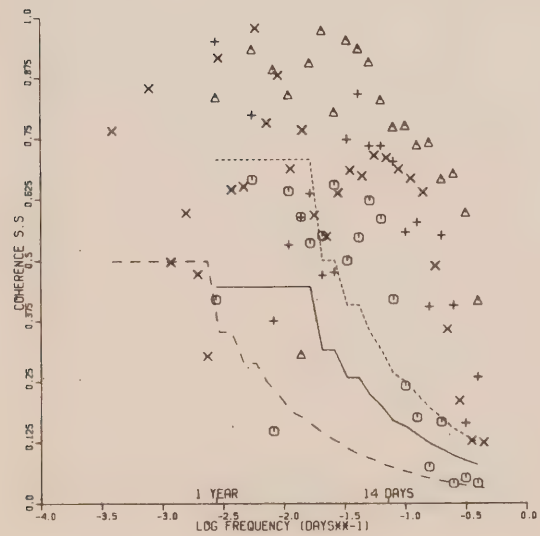
Temperature (top) and salinity (bottom) coherences and phases between 4 pairs of light stations; Active Pass High Water and Race Rocks, Active Pass High Water and Active Pass Low Water, Entrance Island and Active Pass High Water, Departure Bay and Entrance Island.





NOISE COHERENCE
——ACTIVE PASS HW - RACE ROCKS
-------ACTIVE PASS HW - ACTIVE PASS LW
------ ENTRANCE ISLAND - ACTIVE PASS HW
— — —DEPARTURE BAY - ENTRANCE ISLAND

⊙ ACTIVE PASS HW - RACE ROCKS (5 364 DAY BLOCKS)
△ ACTIVE PASS HW - ACTIVE PASS LW (2 364 DAY BLOCKS)
\+ ENTRANCE ISLAND - ACTIVE PASS HW (5 364 DAY BLOCKS)
× DEPARTURE BAY - ENTRANCE ISLAND (4 2560 DAY BLOCKS)



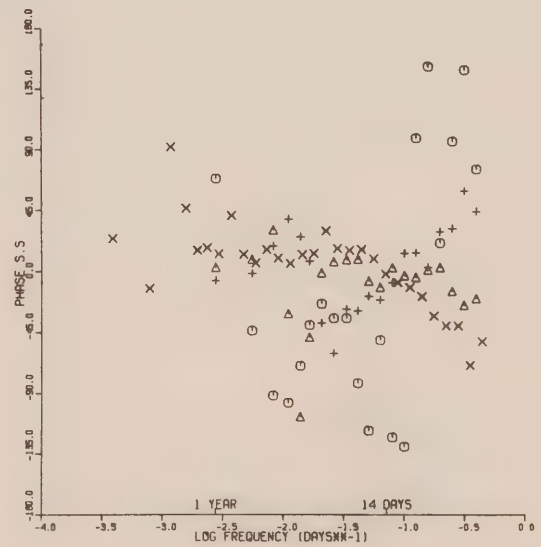
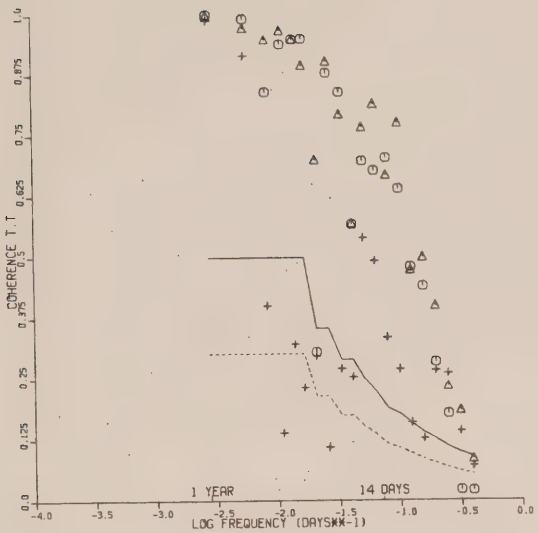
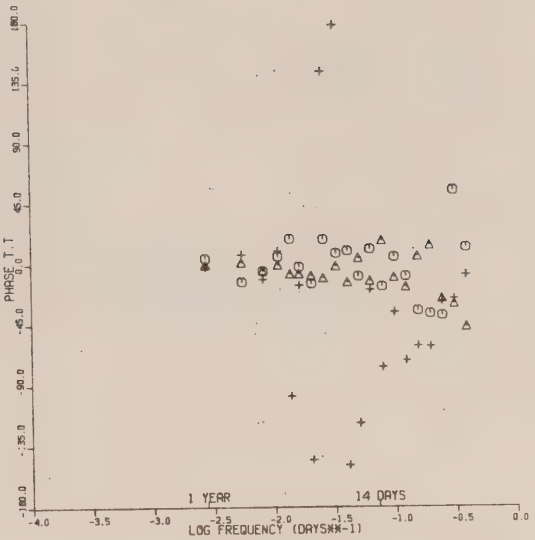


Figure 21

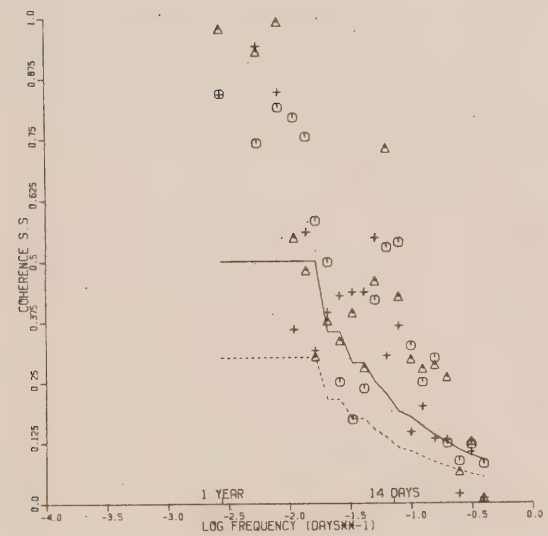
Temperature (top) and salinity (bottom) coherences and phases between 3 pairs of light stations; Sisters Island and Departure Bay, Chrome Island and Sisters Island, Cape Mudge and Chrome Island.





NOISE COHERENCE
———SISTERS ISLAND - DEPARTURE BAY
———CHROME ISLAND - SISTERS ISLAND
- - - - - -CAPE MUDGE - CHROME ISLAND

⊙ SISTERS ISLAND - DEPARTURE BAY (4 364 DAY BLOCKS)
△ CHROME ISLAND - SISTERS ISLAND (4 364 DAY BLOCKS)
\+ CAPE MUDGE - CHROME ISLAND (1) 364 DAY BLOCKS)



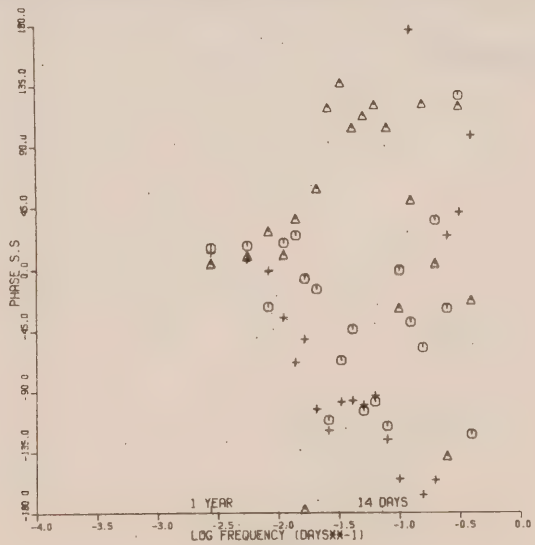
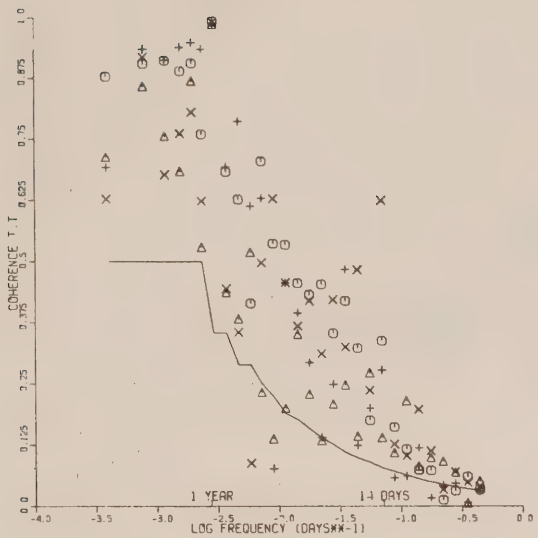
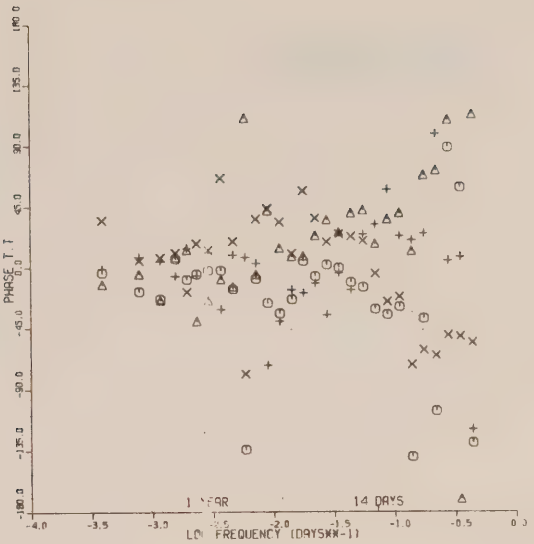


Figure 22

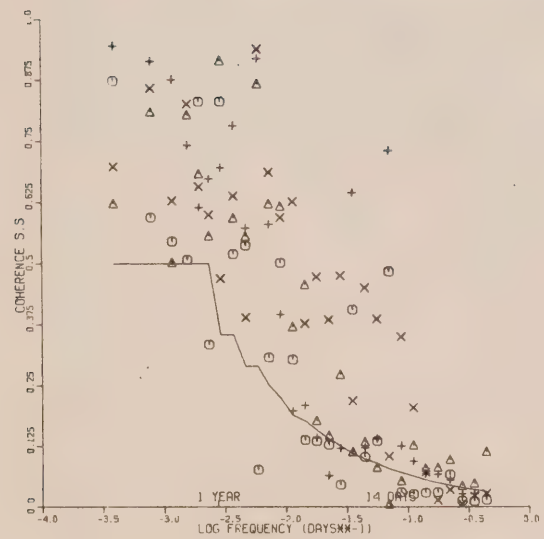
Temperature (top) and salinity (bottom) coherences and phases between 4 pairs of light stations; Pine Island and Race Rocks, Langara Island and Pine Island, Race Rocks and Departure Bay, Departure Bay and Pine Island.





NOISE COHERENCE
——— PINE ISLAND - RACE ROCKS
——— LANGARA ISLAND - PINE ISLAND
——— RACE ROCKS - DEPARTURE BAY
——— DEPARTURE BAY - PINE ISLAND

⊙ PINE ISLAND - RACE ROCKS (4 2560 DAY BLOCKS)
△ LANGARA ISLAND - PINE ISLAND (4 2560 DAY BLOCKS)
\+ RACE ROCKS - DEPARTURE BAY (4 2560 DAY BLOCKS)
× DEPARTURE BAY - PINE ISLAND (4 2560 DAY BLOCKS)



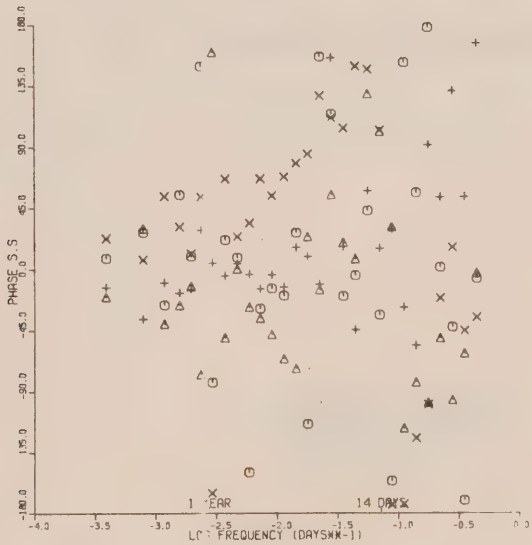
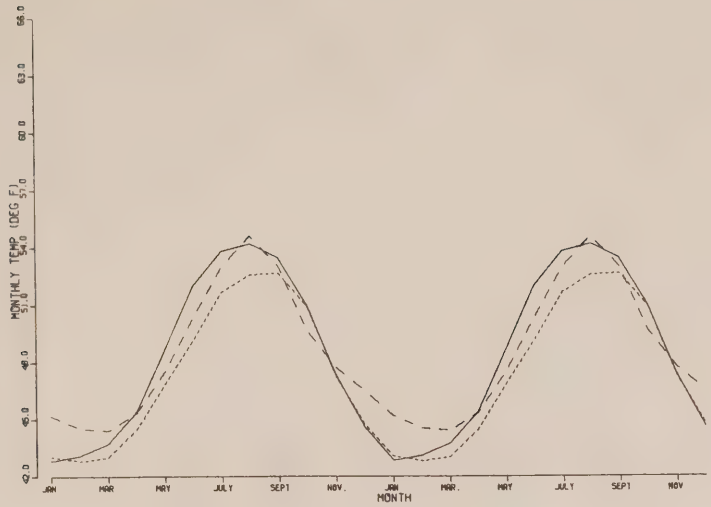
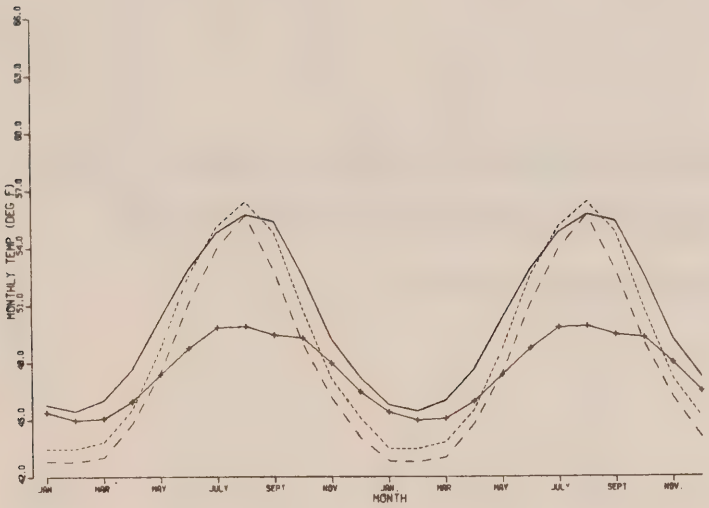


Figure 23

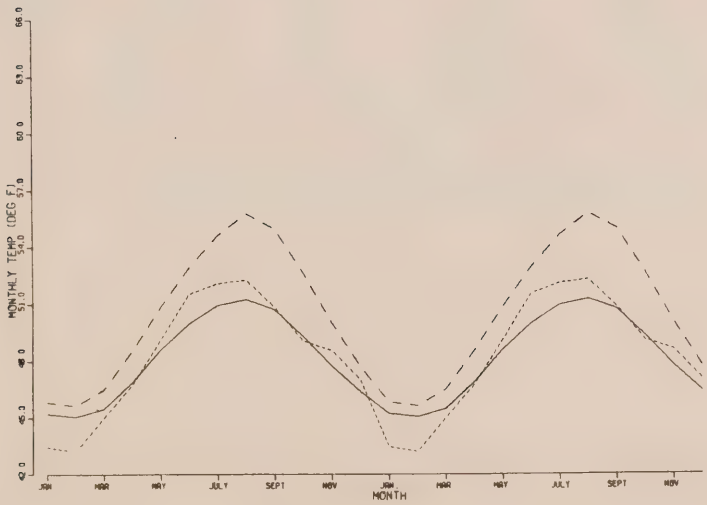
Monthly averaged temperatures for Bonilla Island, Langara Island and Cape St. James (top); for Kains Island, McInnes Island, Egg Island and Pine Island (bottom); and for Race Rocks, Sheringham Point and Amphitrite Point (bottom).



BONILLA ISLAND (1961-1972)
LANGARA ISLAND (1942-1972)
CAPE ST. JAMES (1943-1972)



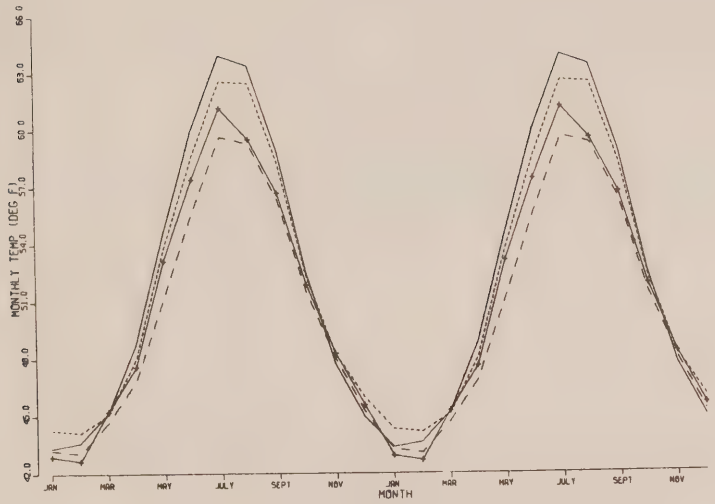
KAINS ISLAND (1935-1972)
MCINNES ISLAND (1955-1972)
EGG ISLAND (1971-1972)
PINE ISLAND (1938-1972)



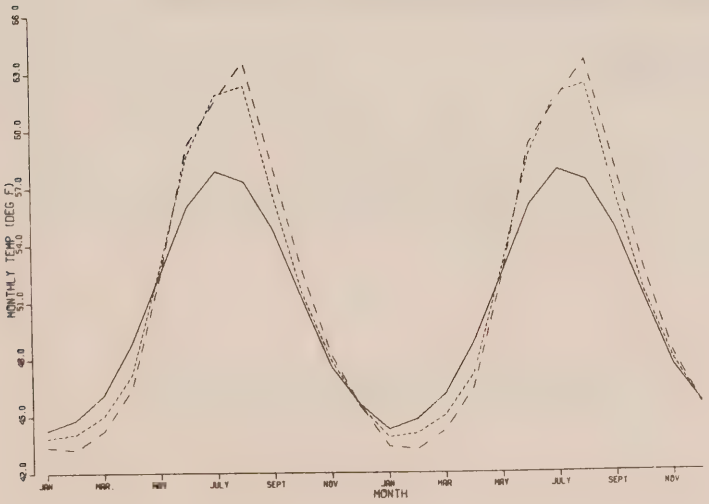
RACE ROCKS (1942-1972)
SHERINGHAM POINT (1969-1969)
AMPHITRITE POINT (1935-1972)

Figure 24

Monthly averaged temperatures for Departure Bay, Entrance Island, Active Pass High Water and Active Pass Low Water (top) and for Cape Mudge, Chrome Island and Sisters Island (bottom).



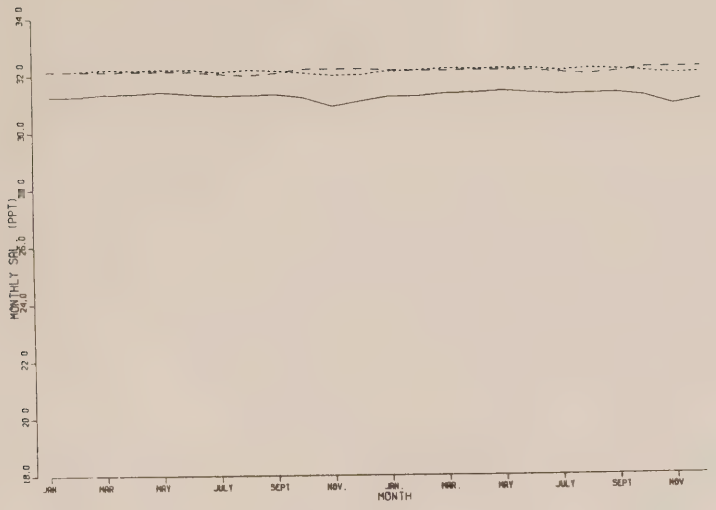
DEPARTURE BAY (1935-1972)
ENTRANCE ISLAND (1937-1972)
ACTIVE PASS HW (1968-1972)
ACTIVE PASS LW (1968-1969)



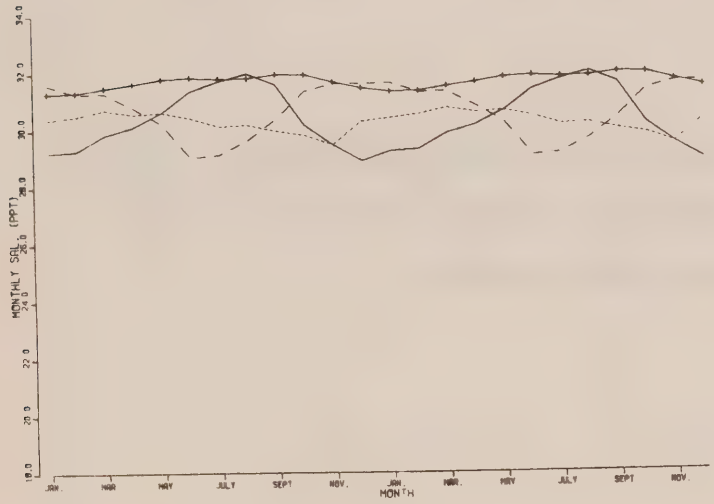
CAPE MUDGE (1937-1972)
CHROME ISLAND (1963-1972)
SISTERS ISLAND (1969-1972)

Figure 25

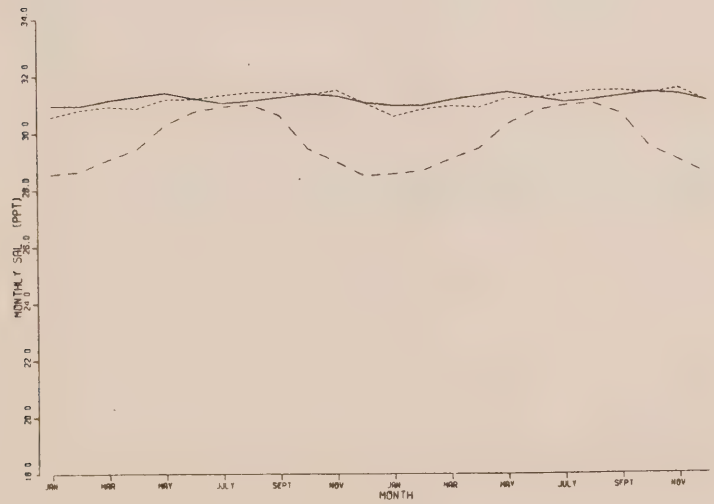
Monthly averaged salinities for Bonilla Island, Langara Island and Cape St. James (top); for Kains Island, McInnes Island, Egg Island and Pine Island (centre); and for Race Rocks, Sheringham Point and Amphitrite Point (bottom).



BONILLA ISLAND (1961-1972)
LANGARA ISLAND (1942-1972)
CAPE ST. JAMES (1943-1972)



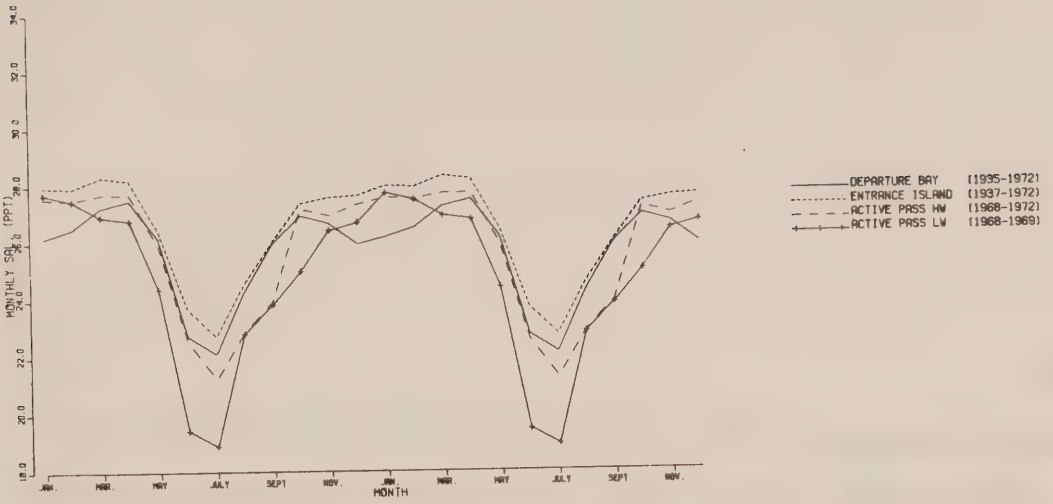
KAINS ISLAND (1935-1972)
MCINNES ISLAND (1955-1972)
EGG ISLAND (1971-1972)
PINE ISLAND (1938-1972)



RACE ROCKS (1942-1972)
SHERINGHAM POINT (1969-1969)
AMPHITRITE POINT (1935-1972)

Figure 26

Monthly averaged salinities for Departure Bay, Entrance Island, Active Pass High Water and Active Pass Low Water (top) and for Cape Mudge, Chrome Island and Sisters Island (bottom).


MONTHLY SAL (PPT)
34.0
32.0
30.0
28.0
26.0
24.0
22.0
20.0
18.0
JAN.
MAR.
MAY
JULY
SEPT
NOV.
MONTH
DEPARTURE BAY (1935-1972)
ENTRANCE ISLAND (1937-1972)
ACTIVE PASS HW (1968-1972)
ACTIVE PASS LW (1968-1969)

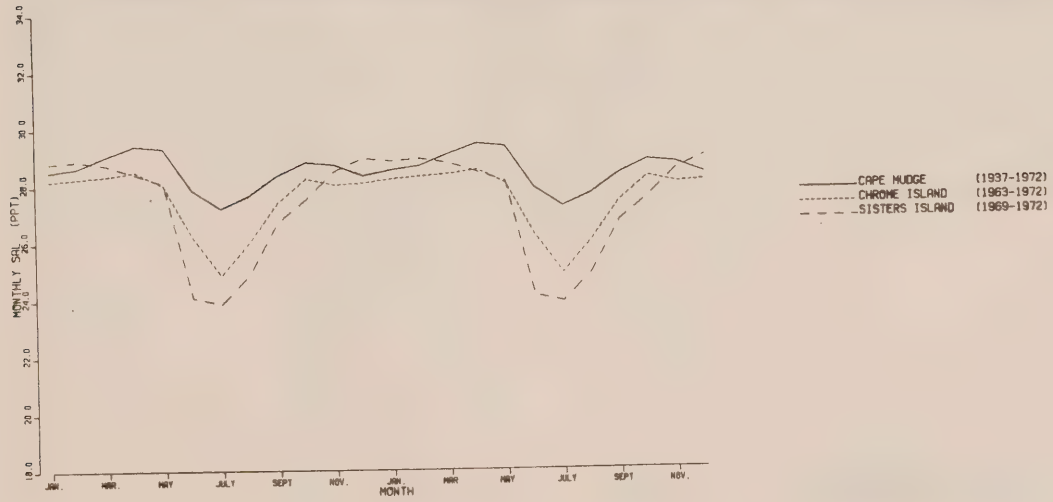
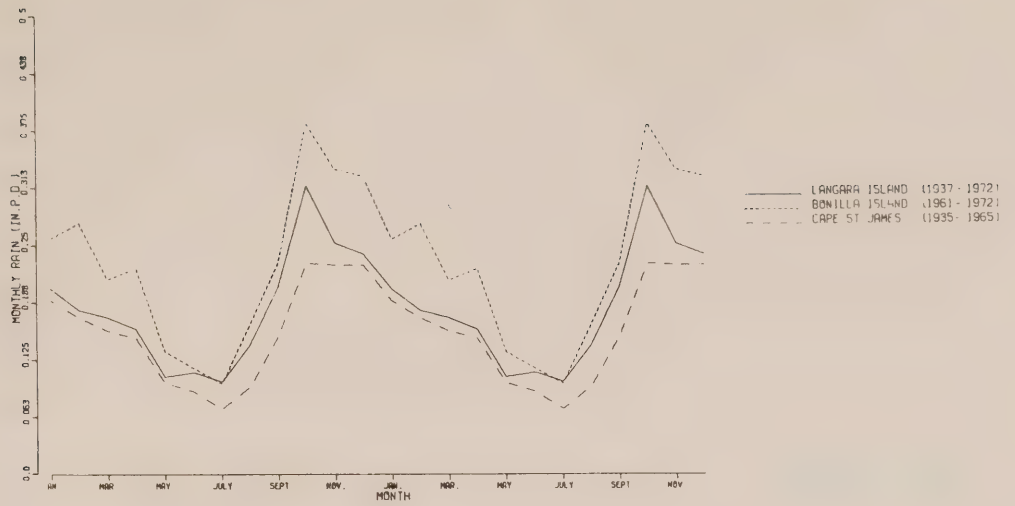
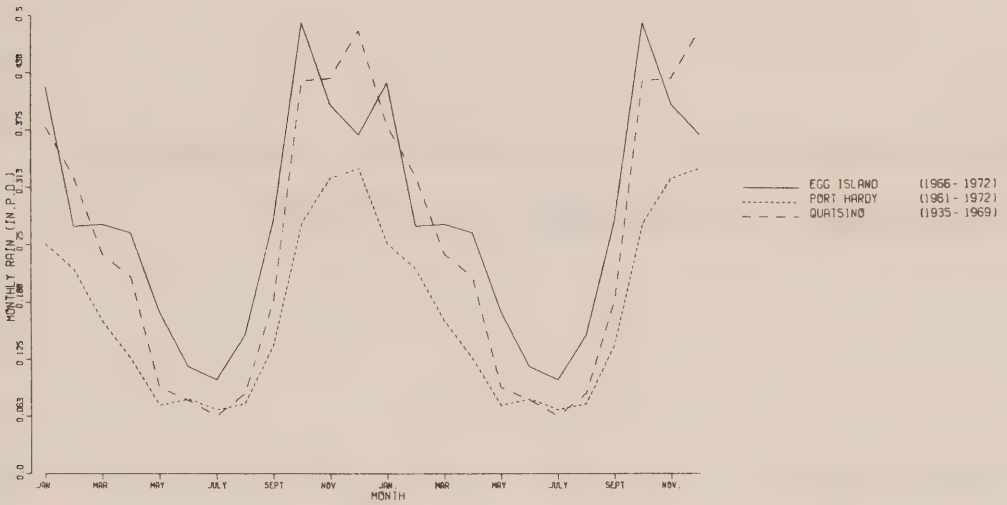

MONTHLY SAL (PPT)
34.0
32.0
30.0
28.0
26.0
24.0
22.0
20.0
18.0
JAN.
MAR.
MAY
JULY
SEPT
NOV.
MONTH
CAPE MUDGE (1937-1972)
CHROME ISLAND (1963-1972)
SISTERS ISLAND (1969-1972)

Figure 27

Monthly averaged rainfall for Langara Island, Bonilla Island, and Cape St. James (top); for Egg Island, Port Hardy, and Quatsino (centre); and for Amphitrite Point, River Jordan and Gonzales Heights (bottom).


MONTHLY RAIN (IN.P.D.)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
JAN
MAR
MAY
JULY
SEPT
NOV.
MONTH
LANGARA ISLAND (1937 - 1972)
BONILLA ISLAND (1961 - 1972)
CAPE ST JAMES (1935 - 1965)


MONTHLY RAIN (IN.P.D.)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
JAN
MAR
MAY
JULY
SEPT
NOV
MONTH
EGG ISLAND (1966 - 1972)
PORT HARDY (1961 - 1972)
QUATSINO (1935 - 1969)

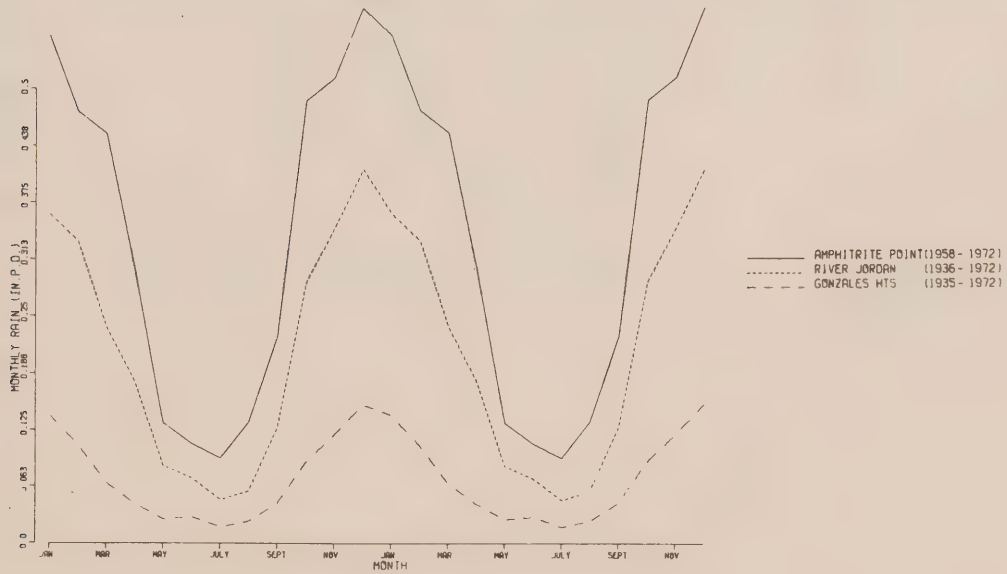
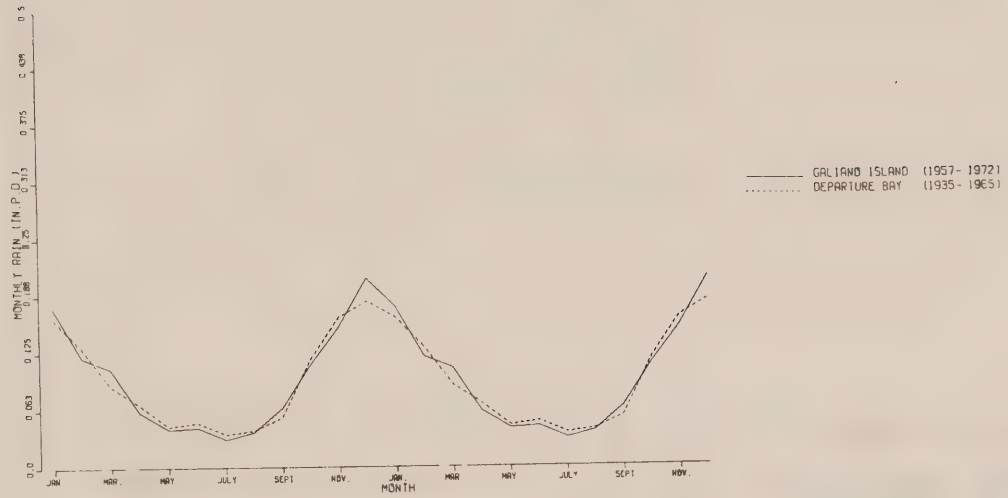

MONTHLY RAIN (IN.P.D.)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
JAN
MAR
MAY
JULY
SEPT
NOV
MONTH
AMPHITRITE POINT (1958 - 1972)
RIVER JORDAN (1936 - 1972)
GONZALES HTS (1935 - 1972)

Figure 28

Monthly averaged rainfall for Galiano Island and Departure Bay (top) and for Denman Island and Campbell River (bottom).


MONTHLY RAIN (IN P.D.)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
JAN.
MAR.
MAY
JULY
SEPT
NOV.
JAN.
MAR
MAY
JULY
SEPT
NOV.
MONTH
GALIANO ISLAND (1957 - 1972)
DEPARTURE BAY (1935 - 1965)

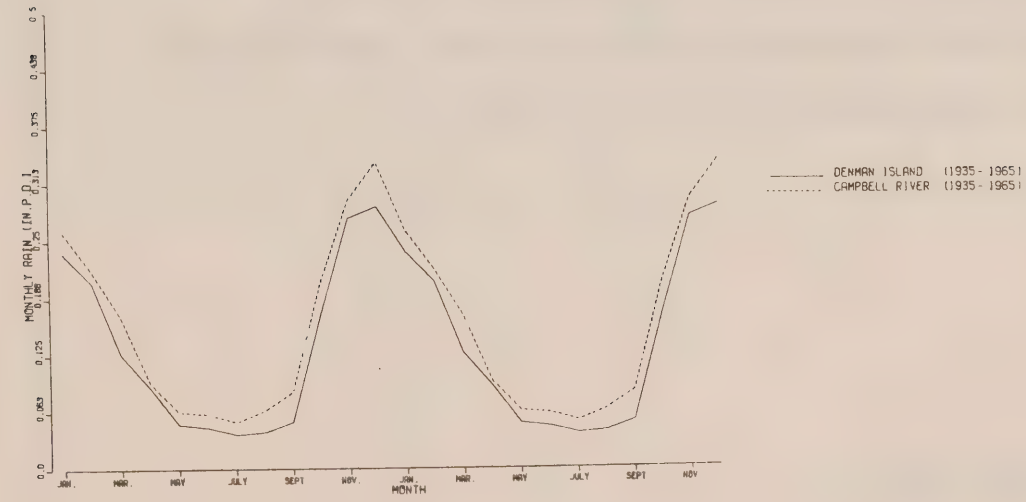
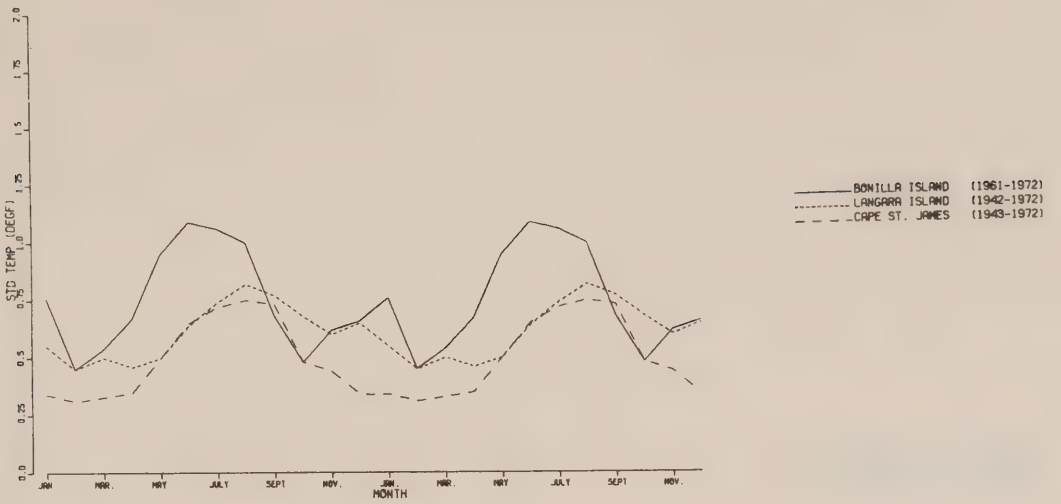
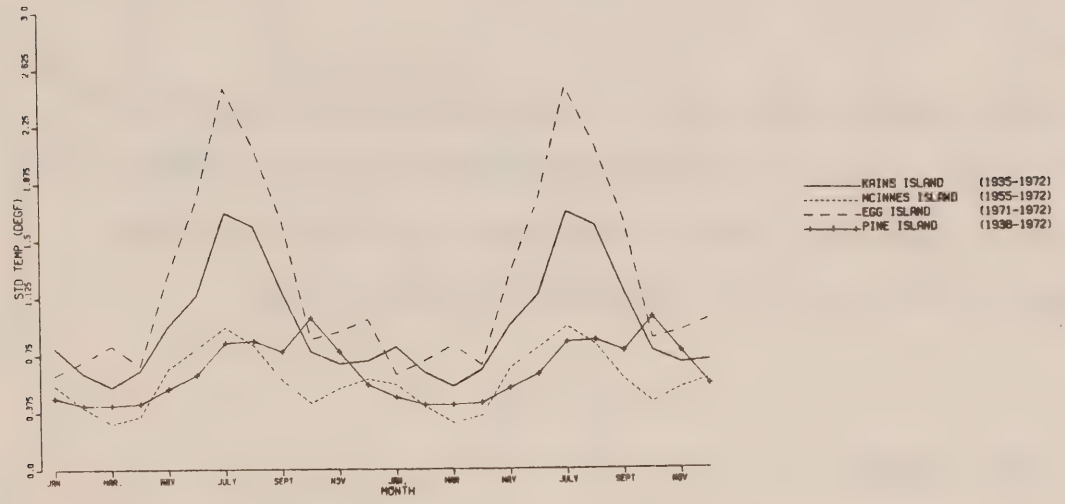

MONTHLY RAIN (IN P.D.)
0.0
0.063
0.125
0.188
0.25
0.313
0.375
0.438
0.5
JAN.
MAR.
MAY
JULY
SEPT
NOV.
JAN.
MAR.
MAY
JULY
SEPT
NOV
MONTH
DENMAN ISLAND (1935 - 1965)
CAMPBELL RIVER (1935 - 1965)

Figure 29

Monthly standard deviations of temperature for Bonilla Island, Langara Island and Cape St. James (top); for Kains Island, McInnes Island, Egg Island and Pine Island (centre); and for Race Rocks, Sheringham Point and Amphitrite Point (bottom). Note that the deviations are plotted with different scales.


STD TEMP (DEGF)
MONTH
JAN
MAR.
MAY
JULY
SEPT
NOV.
BONILLA ISLAND (1961-1972)
LANGARA ISLAND (1942-1972)
CAPE ST. JAMES (1943-1972)


STD TEMP (DEGF)
MONTH
JAN
MAR.
MAY
JULY
SEPT
NOV
KAINS ISLAND (1935-1972)
MCINNES ISLAND (1955-1972)
EGG ISLAND (1971-1972)
PINE ISLAND (1938-1972)

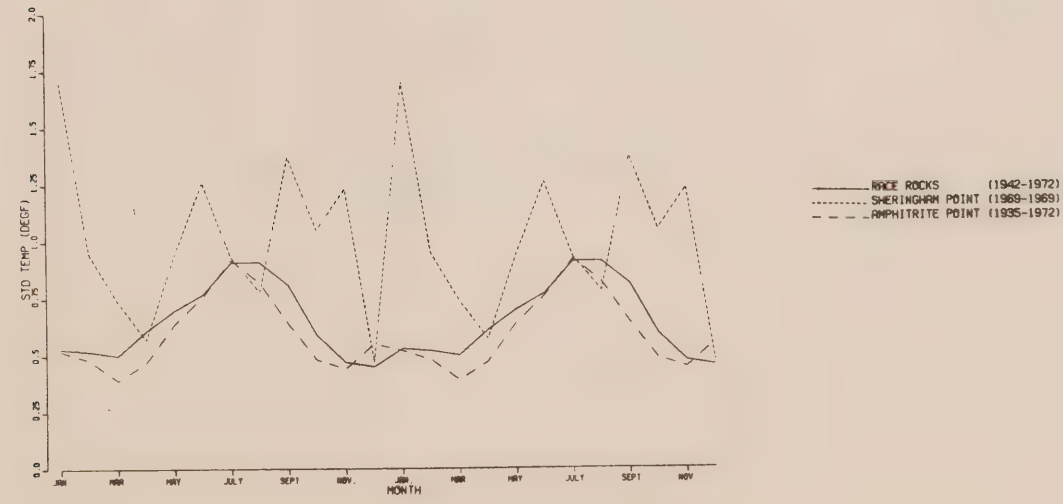
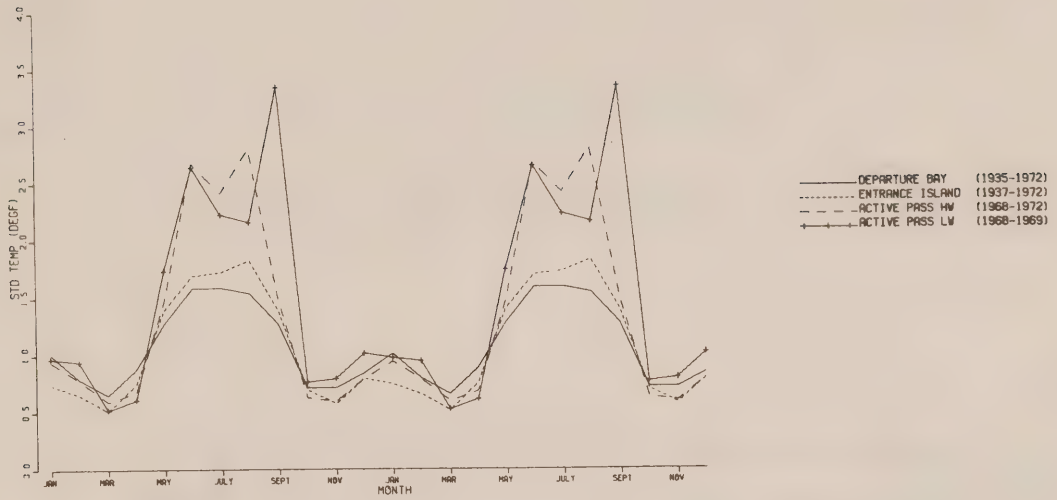

STD TEMP (DEGF)
MONTH
JAN
MAR
MAY
JULY
SEPT
NOV.
RACE ROCKS (1942-1972)
SHERINGHAM POINT (1969-1969)
AMPHITRITE POINT (1935-1972)

Figure 30

Monthly standard deviations of temperature for Departure Bay, Entrance Island, Active Pass High Water and Active Pass Low Water (top) and for Cape Mudge, Chrome Island and Sisters Island (bottom). Note that the deviations are plotted with different scales.


STD TEMP (DEGF)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
JAN
MAR
MAY
JULY
SEPT
NOV
JAN
MAR
MAY
JULY
SEPT
NOV
MONTH
DEPARTURE BAY (1935-1972)
ENTRANCE ISLAND (1937-1972)
ACTIVE PASS HW (1968-1972)
ACTIVE PASS LW (1968-1969)

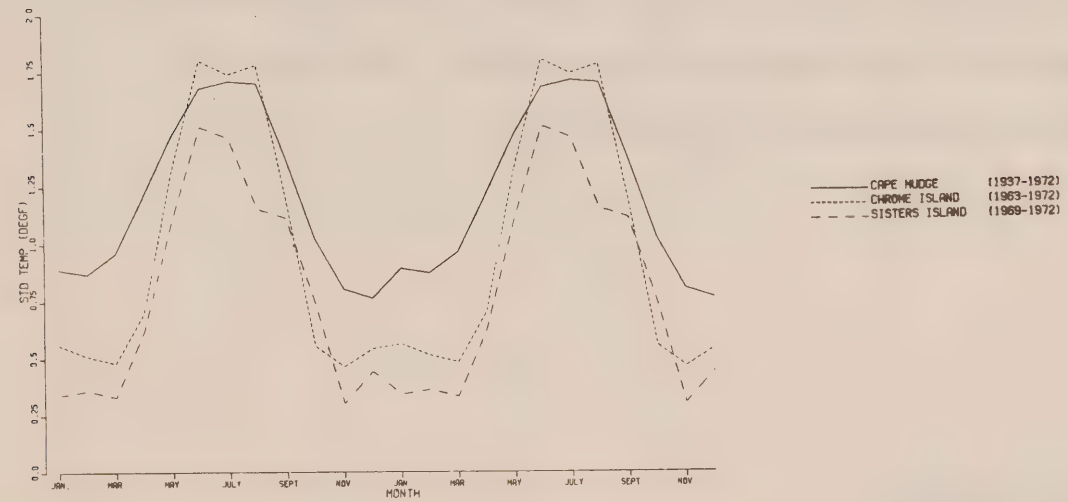
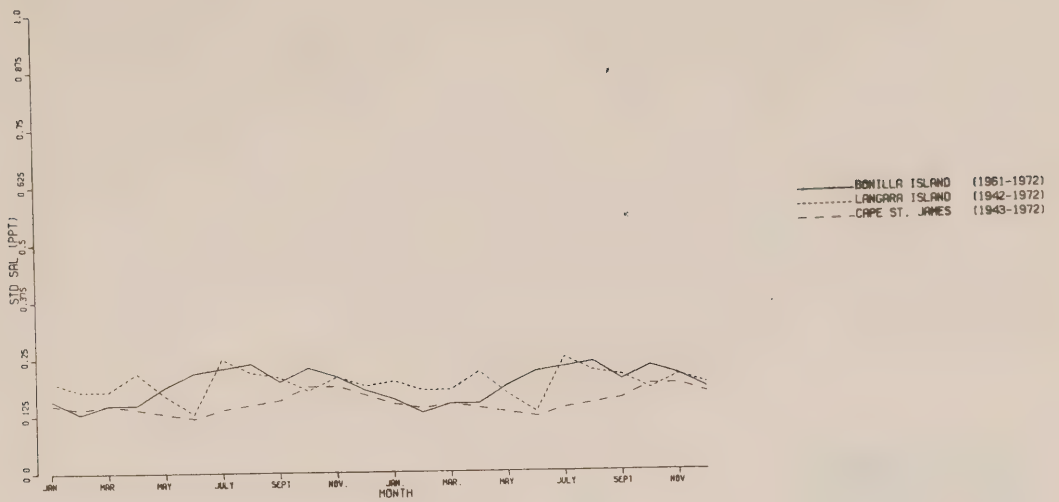
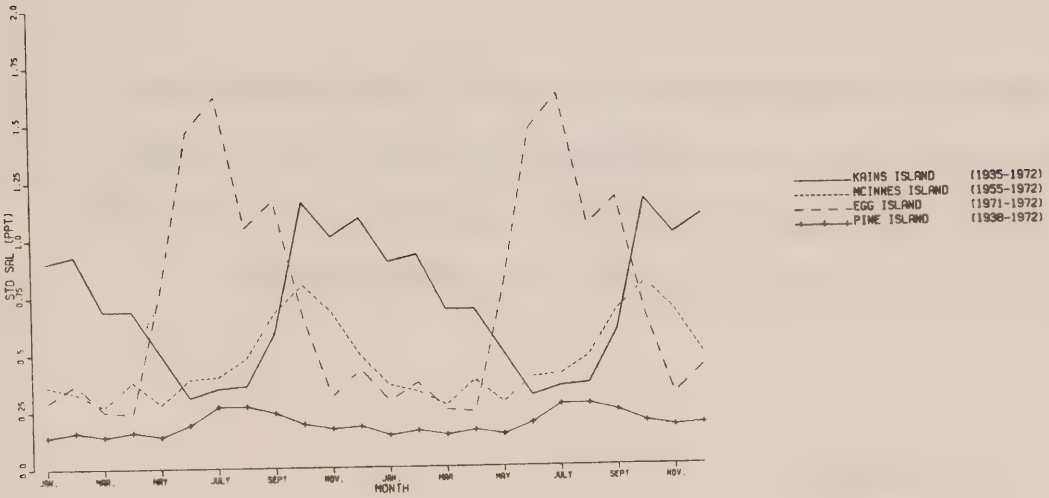

STD TEMP (DEGF)
0.0
0.25
0.5
1.0
1.25
1.5
1.75
2.0
JAN.
MAR
MAY
JULY
SEPT
NOV
JAN
MAR
MAY
JULY
SEPT
NOV
MONTH
CAPE MUDGE (1937-1972)
CHROME ISLAND (1963-1972)
SISTERS ISLAND (1969-1972)

Figure 31

Monthly standard deviations of salinity for Bonilla Island, Langara Island and Cape St. James (top); for Kains Island, McInnes Island, Egg Island, and Pine Island (centre); and for Race Rocks, Sheringham Point, and Amphitrite Point (bottom). Note that the deviations are plotted with different scales.


STD SAL (PPT)
0.0
0.125
0.25
0.375
0.5
0.625
0.75
0.875
1.0
JAN
MAR
MAY
JULY
SEPT
NOV.
JAN.
MAR.
MAY
JULY
SEPT
NOV
MONTH
BONILLA ISLAND (1961-1972)
LANGARA ISLAND (1942-1972)
CAPE ST. JAMES (1943-1972)


STD SAL (PPT)
0.0
0.25
0.5
0.75
1.0
1.25
1.5
1.75
2.0
JAN.
MAR.
MAY
JULY
SEPT
NOV.
JAN.
MAR
MAY
JULY
SEPT
NOV.
MONTH
KAINS ISLAND (1935-1972)
MCINNES ISLAND (1955-1972)
EGG ISLAND (1971-1972)
PINE ISLAND (1938-1972)

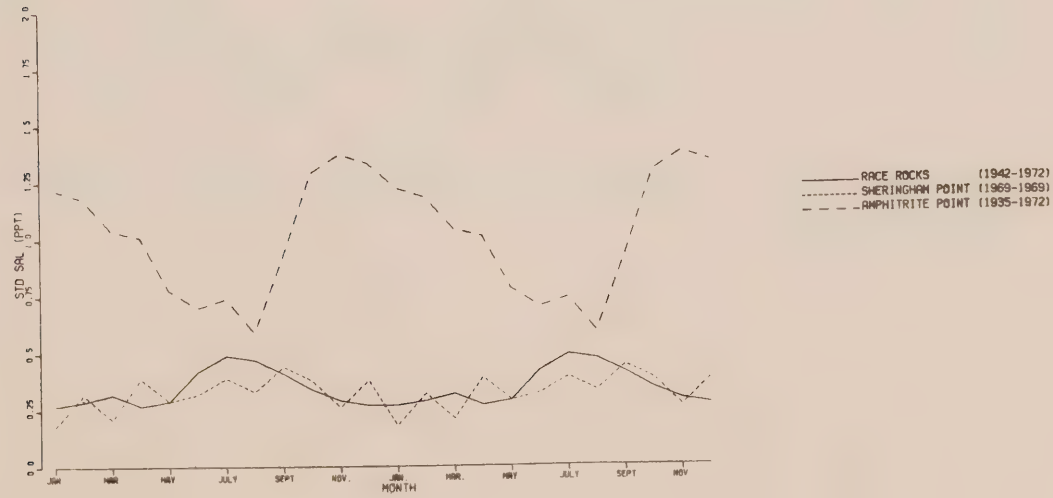
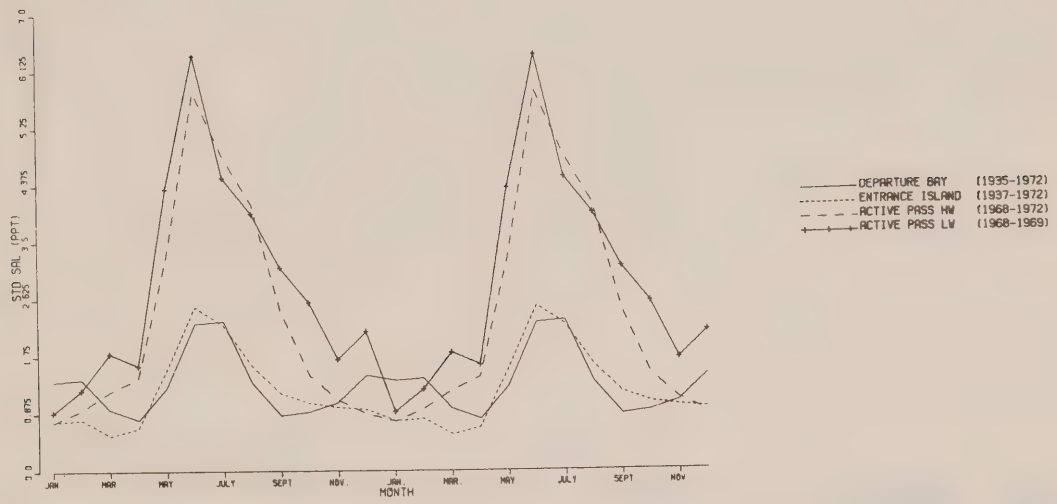

STD SAL (PPT)
0.0
0.25
0.5
0.75
1.0
1.25
1.5
1.75
2.0
JAN
MAR
MAY
JULY
SEPT
NOV.
JAN.
MAR.
MAY
JULY
SEPT
NOV
MONTH
RACE ROCKS (1942-1972)
SHERINGHAM POINT (1969-1969)
AMPHITRITE POINT (1935-1972)

Figure 32

Monthly standard deviations of salinity for Departure Bay, Entrance Island, Active Pass High Water and Active Pass Low Water (top) and for Cape Mudge, Chrome Island and Sisters Island (bottom). Note that the deviations are plotted with different scales.


STD SAL.(PPT)
0.0
0.875
1.75
2.625
3.5
4.375
5.25
6.125
7.0
JAN
MAR
MAY
JULY
SEPT
NOV.
JAN.
MAR.
MAY
JULY
SEPT
NOV
MONTH
DEPARTURE BAY (1935-1972)
ENTRANCE ISLAND (1937-1972)
ACTIVE PASS HW (1968-1972)
ACTIVE PASS LW (1968-1969)

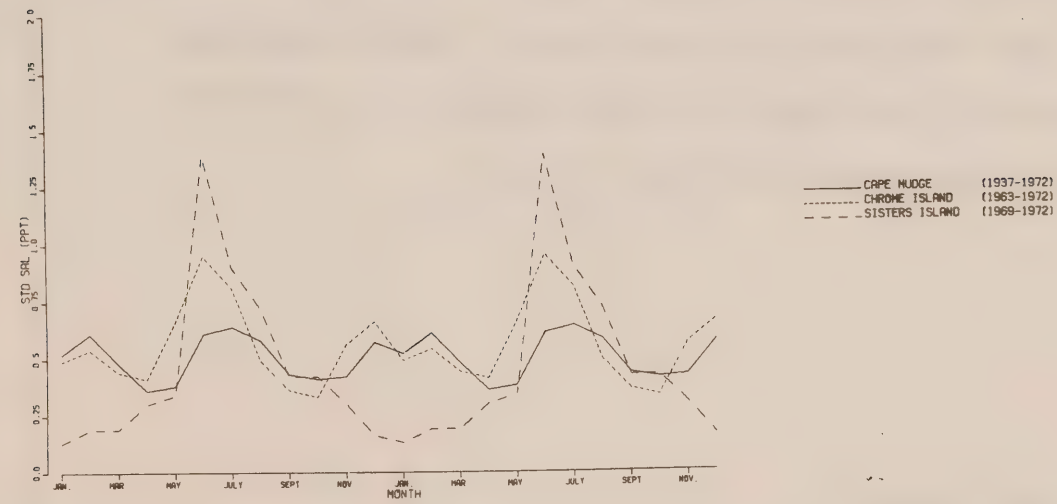
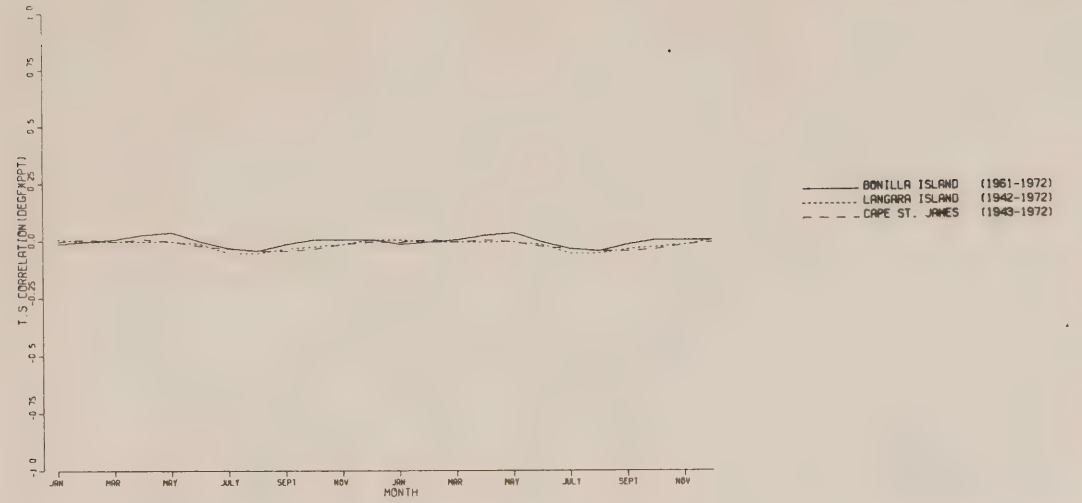
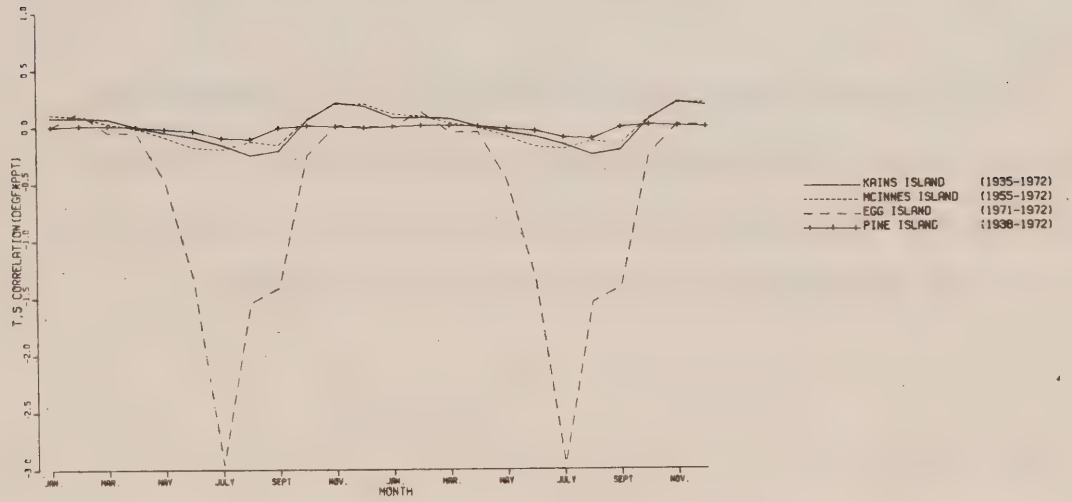

STD SAL.(PPT)
0.0
0.25
0.5
0.75
1.0
1.25
1.5
1.75
2.0
JAN.
MAR
MAY
JULY
SEPT
NOV
JAN.
MAR
MAY
JULY
SEPT
NOV.
MONTH
CAPE MUDGE (1937-1972)
CHROME ISLAND (1963-1972)
SISTERS ISLAND (1969-1972)

Figure 33

Monthly temperature-salinity correlations for Bonilla Island, Langara Island, and Cape St. James (top); for Kains Island, McInnes Island, Egg Island and Pine Island (centre); and for Race Rocks, Sheringham Point, and Amphitrite Point (bottom). Note that the deviations are plotted with different scales.


T.S CORRELATION(DEGF/PPT)
1.0
0.75
0.5
0.25
0.0
-0.25
-0.5
-0.75
-1.0
JAN
MAR
MAY
JULY
SEPT
NOV
JAN
MAR
MAY
JULY
SEPT
NOV
MONTH
BONILLA ISLAND (1961-1972)
LANGARA ISLAND (1942-1972)
CAPE ST. JAMES (1943-1972)


T.S CORRELATION(DEGF/PPT)
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
JAN.
MAR.
MAY
JULY
SEPT
NOV.
JAN
MAR.
MAY
JULY
SEPT
NOV.
MONTH
KAINS ISLAND (1935-1972)
MCINNES ISLAND (1955-1972)
EGG ISLAND (1971-1972)
PINE ISLAND (1938-1972)

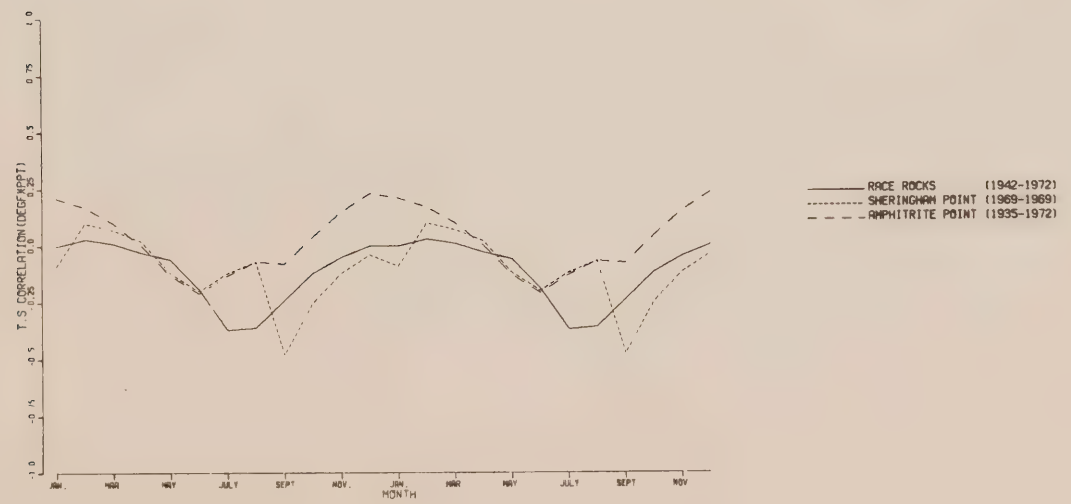
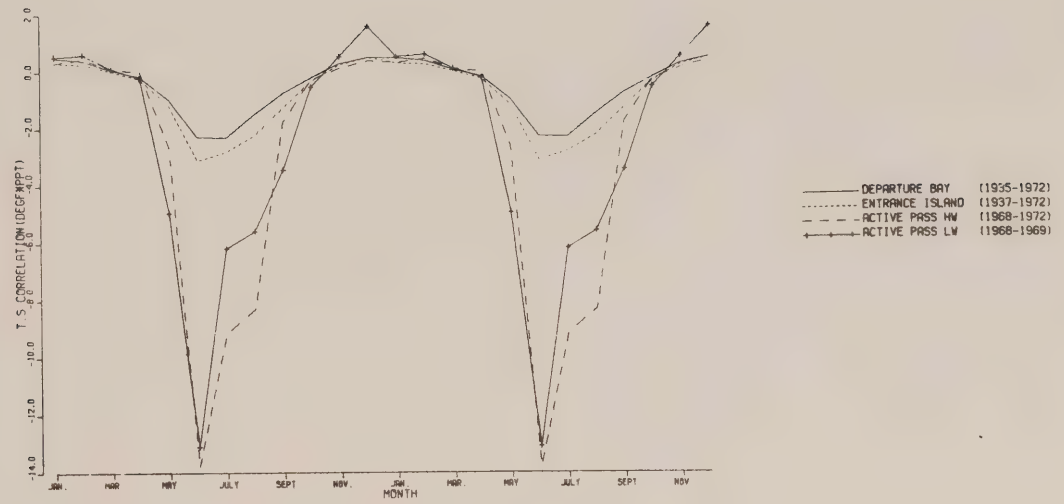
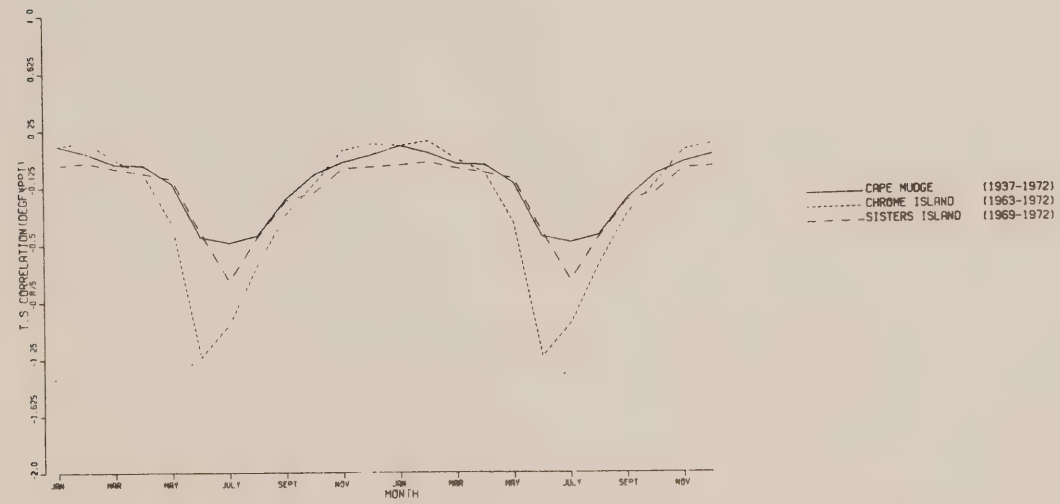

T.S CORRELATION(DEGF/PPT)
1.0
0.75
0.5
0.25
0.0
-0.25
-0.5
-0.75
-1.0
JAN.
MAR
MAY
JULY
SEPT
NOV.
JAN
MAR
MAY
JULY
SEPT
NOV
MONTH
RACE ROCKS (1942-1972)
SHERINGHAM POINT (1969-1969)
AMPHITRITE POINT (1935-1972)

Figure 34

Monthly temperature-salinity correlations for Departure Bay, Entrance Island, Active Pass High Water and Active Pass Low Water (top), and for Cape Mudge, Chrome Island and Sisters Island (bottom). Note that the deviations are plotted with different scales.


T.S CORRELATION (DEGF/PPT)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
JAN.
MAR
MAY
JULY
SEPT
NOV.
JAN.
MAR.
MAY
JULY
SEPT
NOV
MONTH
DEPARTURE BAY (1935-1972)
ENTRANCE ISLAND (1937-1972)
ACTIVE PASS HW (1968-1972)
ACTIVE PASS LW (1968-1969)


T.S CORRELATION (DEGF/PPT)
1.0
0.625
0.25
-0.125
-0.5
-0.875
-1.25
-1.625
-2.0
JAN
MAR
MAY
JULY
SEPT
NOV
JAN
MAR
MAY
JULY
SEPT
NOV
MONTH
CAPE MUDGE (1937-1972)
CHROME ISLAND (1963-1972)
SISTERS ISLAND (1969-1972)

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Pacific Marine Science Report 77-22

THE DISTRIBUTION OF MERCURY IN HOWE SOUND SEDIMENTS

by

R.W. Macdonald and C.S. Wong

INSTITUTE OF OCEAN SCIENCES, PATRICIA BAY
Sidney, B.C.

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November 1977

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ABSTRACT

Sediment cores have been obtained from around the Squamish River-Howe Sound area with particular emphasis on the region surrounding Food Machines Corporation (FMC) chlor-alkali plant at the head of Howe Sound, British Columbia. The cores have been analysed for mercury content and in some instances percent organic carbon or loss on ignition. Sediments from around FMC have elevated mercury levels in the top 20 cm, and one "hot spot" with over 7 $\mu g\ g^{-1}$ of mercury (dry weight basis) has been located. The Squamish River sediments have very low mercury levels with less than 0.05 $\mu g\ g^{-1}$ generally being determined. The mercury content of sediments at the head of Howe Sound tends to decrease from west to east and also with distance from the FMC plant.

Another pocket of sediments located further south off Watts Point has been investigated and high levels of mercury (greater than 1 $\mu g\ g^{-1}$) were found from 4 to 20 cm below the surface. ^{210}Pb geochronology on an undisturbed box core indicates that this mercury is relict and was probably introduced over 40 years ago.

Sediment obtained from the area off Watts Point after the inner basin of Howe Sound became depleted in oxygen has been analysed for mercury in the surface layer (0-2 cm) and slightly below this (2-4 cm). The analyses suggest that mercury levels are not altered in the sediments in response to changing redox conditions in the overlying waters, at least for a short period.

ACKNOWLEDGEMENTS

Most of the cores were collected and all of the mercury analyses were run by Chemex Labs. Ltd. under contract to Ocean Chemistry. We thank Don Morse for providing a report of the methods of analyses and description of the cores, Dave Macdonald of Ocean Chemistry Division for determining the ^{210}Pb dates, and D. Greig and E. Rowe of Ocean Chemistry Division for their help in preparing the manuscript. In addition we are grateful to S. Thomson of the library for editing the rough version of the manuscript, and to J.A.J. Thompson of Ocean Chemistry Division for valuable criticism.

INTRODUCTION

In 1965 Food Machines Corporation (FMC) started production of chlorine and caustic at a plant located at the head of Howe Sound. Use of the mercury cathode process resulted in a continuous loss of mercury both to the atmosphere and to the estuarine waters. Prior to 1970 when the first B.C. Pollution Control Branch licence was issued, little or no record of the losses is available. Evidence from other chlor-alkali plants shows that a reasonable estimate for mercury loss was about 20 Kg day^{-1}. In 1970 highly elevated mercury levels were found in the indigenous benthic fauna of upper Howe Sound and as a result, Environmental Protection Service (EPS) issued new effluent regulations to the chlor-alkali industry in 1972. All losses were to be monitored on a daily basis and reported to EPS monthly. From these records it appears that actual losses are now well below the allowed maximum levels. Mercury releases have accordingly decreased from an estimated 20 Kg day^{-1} in pre-1972 to about 0.07 Kg day^{-1} since that time. Losses in the outfall appear to be less than this and in June 1972 an average of 2.8×10^7 L day^{-1} of water containing 1.5 µg L^{-1} of mercury was discharged into Howe Sound; i.e. about 43 g day^{-1} of mercury. Losses to the atmosphere, and into the products, chlorine and caustic, also take place. Mercury entrainment in the products does not constitute a source of mercury to Howe Sound sediments, but atmospheric losses certainly could be a possible route by which mercury enters Howe Sound. The importance of this pathway has not been investigated.

In 1973 an investigation was made of the distribution of mercury in the sediments of Howe Sound (Thompson and McComas) during which numerous grab samples and several cores were analysed. An areal distribution of mercury in the upper Howe Sound sediments was obtained and several "hot spots" were located particularly close to the FMC plant. As a part of a study on the mobilization of mercury in Howe Sound, a contract (#08 SS KF 832-6-1065) was awarded to Chemex Labs. Ltd. to obtain cores throughout the Howe Sound-Squamish River-Mamquam channel area, and to analyse for mercury as a function of depth in each core. This report presents the results of that contract. The re-examination of this area with emphasis

on determining mercury concentrations as a function of depth in the sediment had as objectives:

1. to determine what influence the new effluent restrictions have had on mercury accumulating in the sediments,
2. to find out if the levels reported by Thompson and McComas (1973) have altered since 1973 as a result of mercury migration,
3. to provide some "high" mercury sediments for a laboratory study.

SEDIMENT SAMPLING

Locations at which a core was obtained are identified in Figure 1. In general 4 types of bottom environment were sampled, nearshore, Howe Sound deep water sediments, Squamish River sediments and Georgia Strait sediments as a background.

The nearshore cores were obtained by hand driving 2" O.D. Acrylic tubes into the sediment (cores #1-#8). The core tubes were then sealed at both ends and transported to the lab where they were frozen, care being taken to maintain them always in the vertical position. When solid the tubes were cut lengthwise with a radial arm saw and the cores were removed intact. Sub-samples were removed from the partially thawed cores at 2 cm intervals and placed in Whirl Pak bags. When thawed the samples were homogenized by rolling. One gram of each wet sample was analyzed and each result of mercury content over 1 $\mu g\ g^{-1}$ was rechecked with another one gram sample. For each recheck a % moisture and % loss on ignition were also determined.

The Howe Sound sediments and two cores at a background station in Georgia Straits (#25 a,b) were obtained from the *Hudson Explorer*. A Phleger corer was used with 1½" O.D. thinwall acrylic tubing inserts. Each core was sealed in its tube on surfacing and was transported to the lab in a vertical position on the same day when they were frozen until subsampling took place. Again these cores were subsampled at 2 cm intervals and each subsample was air dried in a kraft envelope. The dried sample was subsequently pulverized in a tungsten carbide ring pulverizer. Core #24(a) was treated first and #24(b) last to check on possible carry over contamina-

tion from the Howe Sound samples.

Sediment samples obtained by plastic syringes from a Soutar-Bruland box corer by Ocean Chemistry staff were similarly treated. Five prepared lake sediment samples were also analysed for mercury as control standards. These samples were part of an interlaboratory quality control round robin series conducted by Canada Centre for Inland Waters (CCIW). Results of the analyses are shown in Table 5. Organic carbon content (expressed as a percentage) was also determined for 50 of the subsamples.

The Squamish River sediments were obtained by hand driving 2" acrylic tubing into areas of active sedimentation (i.e. sand bars within the river). These cores were subsampled at 2 cm intervals for the first 6 cm, and then a subsample was taken 10 cm from the top, at mid core, and at the bottom of the core. The subsamples were then treated in an identical fashion to the Howe Sound deep water sediments. Descriptions of the coring procedure and a physical description of the core are given in Tables 1 and 2 along with the sampling locations and dates. Table 3 presents the results of analysis on all of the cores except the box core which is covered in Table 4.

Sometime during the summer of 1977 the bottom water in the inner basin of Howe Sound went anoxic. The event was first detected when bottom trawls in the area turned up dead animals, and nekton normally indigenous to the deeper water were not found in het hauls (Levings, 1977). This rare anoxic event provided an opportunity to examine the mercury levels in the sediment to see if there was a detectable difference as a result of the changing water regime. An Ocean Chemistry cruise (OC-771S-004) was diverted to this area allowing a limited number of bottom samples to be taken. Grab samples were obtained at eight stations (see Table 1 and Figure 2) and two subsamples were removed based on the stratigraphy, one coming from the soft surface layer (0-2 cm) and the second from deeper, more compact material (2-4 cm). These were frozen in Whirl Pak bags and analyzed for mercury in the same manner as previous sediments.

ANALYTICAL METHODS

Mercury

Mercury was determined by flameless AA by a procedure based on the method of Hatch and Ott (1968). A 1 gram portion of the sediment was digested in a test tube in a mixture of H_2SO_4 and HNO_3 for 2 hours in a water bath at 90°C (0.5 g of potassium persulphate was added to oxidize interfering organics). After cooling, 10% of $KMnO_4$ was added to excess (visible purple colour remaining) to oxidize interfering species, usually organics, and then the sample was reheated for 5 - 10 minutes.

Cooled samples were then transferred to a sparging apparatus, brought to volume and treated with stannous chloride and hydroxylamine hydrochloride to reduce the mercury to a free state. Free mercury was sparged from solution with air and passed through a drying tower (magnesium perchlorate) into a long absorption cell before venting to the atmosphere. The emission from a mercury hollow cathode lamp is partially absorbed by the mercury and the resulting absorbance signed was recorded on a Varian AA5. The absorbance is related to the total mercury in the solution. Standards were prepared from aqueous mercury stock solution and were treated in the sparging cell in the same manner as samples.

Organic Carbon

The method for organic carbon was based on that devised by Gaudette *et al.* (1974). The sample was pulverized and treated with dilute acetic acid to remove carbonates. The sample was then oxidized with a dichromate-concentrated sulphuric acid solution, and the residual dichromate was titrated with standardized ferrous ammonium sulphate.

Loss on Ignition

The loss on ignition was determined by heating the air dried sample in an oven at 500°C for two hours, weighing before and after heating. Dean (1974) has shown that CO_2 should not be lost from carbonates at this temperature, and that good correlation can be found between loss on ignition and percent organic carbon determined chromatographically in lake sediments.

^{210}Pb

Measurement of ^{210}Pb in the sediment was based on the method of Matsumoto (1975). The sediment samples were obtained by plastic syringes (with the tip and end removed to produce an open tube) inserted through the large holes on the box core barrel. The same core was used both for mercury determination and geochronology. (Samples for mercury determination were removed by plastic syringe from the small holes on the opposite side of the core barrel.)

Each subsample was frozen in a Whirl Pak bag and stored frozen until analysis. The sediment was thawed out, homogenized, and percent moisture was determined by drying at 110°C. The density of the sedimentary particles was determined by pycnometry and a salt correction based on the salinity of the bottom water in Howe Sound was used to determine porosity. Manual integration of the porosity versus depth curve was used to generate the corrected depth z' which would result in the absence of compaction (see Table 6).

The dried sediment was pulverized in a marble crucible and about 3 grams of the dried sediment were weighed into an Ehrlenmeyer flask where it was leached under reflux in concentrated HNO_3 for 2 hours at about 120°C. After leaching, the sediment was filtered off, a $Pb(NO_3)_2$ carrier was added and the lead was electrolytically plated out as PbO_2. The deposit was washed, redissolved and the lead was precipitated as the sulphate. The $PbSO_4$ precipitate was deposited evenly on a glass fibre filter paper by suction filtration, and was then dried and stored for thirty or more days to allow growth of the ^{210}Bi daughter. The β decay of the ^{210}Bi was counted on the LB 1000 low background counting system.

RESULTS AND DISCUSSION

Description of the physical appearance of the cores and grab samples is given in Table 2, and the results of all the analyses are presented in Table 3. Vertical profiles of all of the cores are provided in Figures 3-10 for easy reference. Cores # 23 and #24 a,b were obtained as background samples. From Figures 8 and 9 it is apparent that the background level is about 0.1

$\mu g\ g^{-1}$. The other cores taken in this study will be discussed with these background levels in mind.

Cores taken from the tidal flats in front of FMC consisted largely of medium sand interspersed on occasion with grey-black silt. They are characterized by elevated mercury levels at the surface tending to drop off with depth (Figure 3). It is apparent that elevated levels in cores numbered 1 and 2 continued down to 16-20 cm below the surface. As one proceeds west along the tidal flats the mercury levels dropped and did not extend as deeply into the sediment. Cores taken in surrounding nearshore areas (Figure 4) show that high mercury levels are not confined to the tidal flats over which the outfall flows, and although only a short core could be obtained at Station 8 due to the nature of the substrate, analysis revealed that this station off FMC dock was a "hot spot" with over 7 $\mu g\ g^{-1}$ mercury (dry weight basis).

Further off shore at Stations 9 to 19 (Figures 5, 6 and 7) the mercury levels tended to be lower, and the levels increased from west to east. For example, if cores 12, 16 and 17 are compared with cores 11, 14 and 15, it can be seen that coarser sediment material is found to the west and that this material originates from the Squamish River. Analysis of cores 25, 26, 27, 28 and 29 (Figures 9 and 10) show that sediments in the Squamish River are extremely low in mercury when compared to the background stations and material from the river does not constitute a source of mercury at present nor has it done so in the recent past. Any contribution from this source would dilute or bury sediments containing higher levels of mercury. The deep layers of the nearshore sediments have mercury levels which are closer to the Squamish River sediments than the Howe Sound or Georgia Strait backgrounds. This probably reflects their origin which is not surprising in view of their coarseness.

A pocket of sediments containing in excess of 1 $\mu g\ g^{-1}$ of mercury was located in an earlier survey (Thompson and McComas, 1973) to the west of Watts Point. Cores 20, 21 and 22 (Figures 7 and 8) were taken in this region and it can be seen that elevated mercury levels are found in a subsurface layer somewhere between 4 cm and 20 cm. In an attempt to determine the origin of these sediments an undisturbed Soutar-Bruland box

core was obtained in the middle of the area and was sampled both for mercury and for ^{210}Pb geochronology. Figure 11 shows the results obtained on mercury analysis for randomized samples. Clearly the subsurface elevated mercury level can be seen extending from about 5 cm to 18 cm. The ^{210}Pb geochronology shows an apparent sedimentation rate of about 0.21 cm yr^{-1} (as uncompacted surface material). Furthermore the surface 8 cm appears to be strongly bioturbated. Guinnasso and Schink (1975) have modelled the appearance of a point source contaminant as a function of time for various mixing rates. The model assumes that the system can be represented by two layers with a mixed layer lying on top of a non-mixed layer. Comparison with our data shows that at least one mixed layer has sedimented since the mercury was introduced, which indicates that the time of injection was over 40 years ago. Since there is a dump site for dredge spoils in this area it might be argued that this is a disturbed core and high mercury levels come from dumped material which has since been covered over. However, the core did not have the appearance of being disturbed and consisted of hard uniform fine grained grey mud throughout without obvious stratigraphy. We have found from cores obtained at other dump sites and even in two of the grab samples taken near the vicinity of this box core that dumped material can be identified by coarser inclusions such as small rocks or bark. None of this was evident in the box core and the surface layer appeared undisturbed consisting of a thin veneer of soft grey mud overlying uniform compact grey mud. The porosity profile (Figure 13) for this core also shows no discontinuities. The box core appears to consist of material which has uniformly sedimented and has had a relict mercury input but has not been subject to a recent mercury input.

Evidence has been presented that mercury in sediments may be associated with organic carbon (Lindberg and Harriss, 1974; Lindberg *et al.*, 1975; Windom, 1975). An examination of the relationship between percent organic carbon and mercury content in the present study shows a general linear trend with considerable scatter probably due to variation of grain size amongst other reasons. Figure 14 shows this and also that the subsurface sediments off Watts Point are anomalous in that they have a much higher mercury content than one would predict on the basis of organic carbon

content. This may indicate that the mercury has been deposited in a different manner here (for example, direct adsorption rather than being tied up and precipitated by naturally occuring organic material) or that organic carbon originally present has since been removed while the mercury has been left behind.

As noted earlier the deep waters of the inner basin of Howe Sound became depleted in oxygen during the summer of 1977. An Ocean Chemistry Cruise was made to the area to obtain a limited number of sediment samples from the area off Watts Point to see if anoxic conditions resulted in measureable changes in mercury concentration and also to obtain more data to help sort out the questions raised previously about the origin of mercury in the sediments off Watts Point. A total of 8 shallow grabs (0-4 cm) were obtained and an attempt was made to differentiate the surface which was often streaked with black and occasionally smelled of sulfide (see Table 2) from the deeper layer which tended to be compact grey fine grained mud. The grabs taken at Stations HV-2 and H-4 both had small rocks or wood fibres at the surface which might have originated from dumping activities, however the mercury levels given in Table 7 were uniformly low. It seems that the layer of sediment with high mercury levels was buried below 4 cm at all of the stations. Although the contour plot of surficial sediments provided by Thompson and McComas (1973) shows levels of over 1 $\mu g\ g^{-1}$ throughout this area, the grab samples consisted of material down to 8 cm below the surface and so probably included buried sediment (Thompson, 1977).

Table 7 also shows that the surface sediment layer (affected by anoxic conditions as indicated by black streaks and the odour of H_2S) is not distinguishable from the hard grey mud just below in terms of its mercury content. It would appear therefore that changing conditions of Eh (redox potential) as a result of oxygen depletion have not resulted in a measureable effect on mercury content of the sediments. This is in accord with the results of Lu and Chen (1977) who found no significant effect on the interstitial water concentration of Hg in response to alteration of the redox condition.

If it is accepted that the high mercury sediments off Watts Point are relict, the question arises as to their origin. An obvious candidate is

Woodfibre Ltd. which has been in operation near the area since 1912. Other studies have shown that elevated mercury levels in sediments can be identified with a nearby source (Cranston and Buckley, 1972; Applequist *et al.*, 1972). Woodfibre satisfies both the requirements of geographical location and time period. It is reported however that Woodfibre has not used mercury slimicides with the exception of a brief one month trial in the early 1940's (McBean, 1977). This would not seem to be a large enough source unless other parts of the process resulted in mercury losses in the past. A superficial look at mining in the area does not reveal any possible source except Brittania mines (Carter, 1977). There is no record of their using mercury, and indeed sediments over toward the mine have low mercury levels (Thompson and McComas, 1973).

CONCLUSIONS

1. Surface sediments near FMC have elevated mercury levels with respect to Squamish River, Howe Sound or Georgia Strait background levels. One "hot spot" with over 7 $\mu g\ g^{-1}$ mercury was found near the FMC dock.
2. Squamish River sediments are uniformly low in mercury and do not apparently constitute a source of mercury, nor have they in the recent past.
3. Mercury levels tend to decrease from west to east and also decrease with distance away from FMC.
4. High mercury levels found in subsurface sediments off Watts Point appear to be relict and were probably introduced around or before 1940.
5. Anoxic conditions which occurred in the bottom waters of the inner basin of Howe Sound do not appear to have affected mercury levels in the sediment.
6. With the exception of the buried sediment off Watts Point there appears to be a correlation between organic content and mercury in the sediments.
7. The results of this survey agree very well with both the general pattern found by Thompson and McComas (1973) and the absolute values they determined for mercury. This indicates that over the time span of four years no detectable change has taken place and that the mercury is to some degree stabilized in the sediments.

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Table 5. Mercury results obtained by Chemex compared with average results reported by many laboratories during interlaboratory quality control study number 18.

Table 6. Observed ^{210}Pb and Porosity (ϕ) of sediment in box core.

Table 7. Mercury analysis of grab samples taken during Vector Cruise OC-77-IS-004.

TABLE 1

The location of cores taken during the study.

Station (Core) Number	Date/Time	Location	Remarks
1	18/11/76 0830	48° 41.08'N 123° 9.83'W	Core was obtained just above prevailing water line.
2	18/11/76	49° 41.08'N 123° 9.83'W	Duplicate of core 1
3	18/11/76 0900	49° 41.11'N 123° 9.88'W	Off the mouth of a spillway draining FMC property in approximately 1m of water.
4	18/11/76 0930	49° 41.16'N 123° 9.97'W	Just at the tip of the point.
5	19/11/76	49° 41.32'N 123° 9.41'W	Directly across the channel from an "A" frame and in front of 3 buildings in about 1m of water.
6	19/11/76	49° 41.02'N 123° 9.37'W	Log Booming area directly across from FMC dock below a very prominant rock bluff in 3 m of water.
7	19/11/76	49° 40.70'N 123° 9.52'W	Approximately 0.5 km south of Core 6 in a line bisecting channel buoy FIR and FMC dock to Squamish terminals dock in 3.5 m of water.
8	19/11/76	49° 41.02'N 123° 9.85'W	Off FMC dock in 7 m of water.
9	7/12/76 1300	49° 39.10'N 123° 10.25'W	Just off marker buoy Qk FIG Q59 in 13 m of water
10	9/12/76 0830	49° 39.15'N 123° 10.05'W	In line with the marker buoy just off FMC dock in 55 m of water.
11	7/12/76 1340	49° 39.20'N 123° 9.90'W	Just off marker buoy FIR in 11 m of water.
12	7/12/76 1500	49° 39.20'N 123° 10.40'W	On a line between Shannon Falls and a river mouth point on the west shore, off Squamish Terminals in 29 m of water.

Station(core) Number	Date/time	Location	Remarks
13	9/12/76 0900	49° 39.30'N 123° 10.20'W	On Shannon Falls line off FMC dock in 64 m of water.
14	7/12/76 1435	49° 39.40'N 123° 10.00W	On Shannon Falls line in line with buoy FIR and anchor buoys in 46 m of water.
15	7/12/76 1410	49° 39.45'N 123° 9.80' W	On Shannon falls line about 200 m off east shore (BCR embankment) in 55 m of water.
16	9/12/76 0930	49° 39.25'N 123° 11.00'W	On line between Darrell bay Point and a river mouth point on the west shore off Squamish River breakwater in 92 m of water.
17	9/12/76 1000	49° 39.40'N 123° 10.65'W	On Darrell bay line off Squamish Terminals and marker buoy FIG in 82 m of water.
18	9/12/76 1030	49° 39.55'N 123° 10.35'W	On Darrell Bay line off FMC dock in 82 m of water.
19	9/12/76 1100	49° 39.65'N 123° 10.20'W	On Darrell Bay line off marker buoy FIR in 86 m of water
20	9/12/76 1320	49° 39.95'N 123° 13.75'W	One mile from White Rock Pt. 0.3 miles from First creek (Closest to WoodFibre) in 210 m of water.
21.	9/12/76 1345	49° 39.45'N 123° 14.40'W	One half mile out from WoodFibre in line with Watts Point in 242 m of water.
22.	9/12/76 1420	49° 38.80'N 123° 14.40'W	Midway between Watts Point and Foulger Creek in 234m of water.
23.	9/12/76 1600	49° 25.5'N 123° 17.6'W	Radar positioned half way between Finisterre Island and the northern tip of Bowyer Island in 256m of water.
24.a,b	13/12/76 1300	48° 59.9'N 123° 25.1'W	Radar and sextant positioning based on island land marks.In 300 m of water.
25.	15/3/77	49° 45.0'N 123° 8.4'W	Hydro tower, foot of Brennan Street, Brackendale.

Station (Core) Number	Date/Time	Location	Remarks
26	15/3/77	49° 51.7' N 123° 14.0' W	Mile 16 at Pillchuck Creek
27	15/3/77	49° 53.7'N 123° 17.6'W	Mile 18.5 below confluence of Ashlu River
28	15/3/77	50° 6.4'N 123° 22.9'W	Mile 35.3 below confluence of Elaho River
29	15/3/77	50° 6.4'N 123° 23.4'W	Mile 35.5 Elaho River bridge
Box Core	30/11/76 1324	49° 38.85'N 123° 14.6'W	Taken during Vector cruise OC-76-IS-008

Grab Number	Date/Time	Location	Remarks
1	14/9/77 1529	49° 38.7' N 123° 14.25' W	Taken during Vector cruise OC-77-IS-004 Stn. HV-2
2	14/9/77 1640	49° 39.5' N 123° 14.0' W	Stn. HV-3
3	14/9/77 1705	49° 39.5' N 123° 13.6' W	Stn. HV-4
4	15/9/77 0821	49° 37.1' N 123° 13.6' W	Stn. H-1
5	15/9/77 1023	49° 38.41' N 123° 14.29' W	Stn. H-3
6	15/9/77 1130	49° 10' N 123° 14.40' W	Stn. H-4
7	15/9/77 1312	49° 39.64' N 123° 13.82' W	Stn. H-5
8	15/9/77 1410	49° 39.95' N 123° 12.87' W	Stn. H-6

TABLE 2

Physical description of the cores obtained during this study

Core Number	Length cm	Sampling Method	Description
1	26	By pounding a 2 " O.D. acrylic tube into the sand.	Medium sand, yellow-brown interspersed with grey-black silt. No visible evidence of organic matter.
2	22	As above	Duplicate of 1. Medium sand yellow-brown at top shading to grey black silt and sand.
3	29	As above	First 4 cm medium yellow-brown sand. From 4-20 cm medium sand interspersed with grey-black silt. Below 20 cm was fine silty clay.
4	16	As above	Medium sand with organics (grass,wood debris) included throughout the core. Some brown silty mud near the bottom.
5	20	A 2" O.D. acrylic tube was pounded into the bottom by a diver. A piston was used in the tube to prevent washout.	Top 6 cm coarse sand and small stones with some organic inclusions. 6-20cm finer sand with grey black silt interspersed.
6	25	Same as Core 5	Grey-black clay. First 6 cm contained much organic debris.
7	12	Same as Core 5	First 4 cm was yellow-brown silt. Bottom 8 cm was stiff grey-black silt-clay
8	4	Same as Core 5	Fine grey-black sand-silt
9	4	Phleger Corer with 1 1/2" plastic insert.	Coarse sand with some fine silt.
10	24	Same as core 9	Top 14 cm was grey-black silty mud. From 14-17 cm was fine sand and black mud from 17-24 cm was medium sand.
11	20	Same as Core 9	Fine brown sand interspersed with grey-black silty mud.

TABLE 2 (continued)

Core No.	Length	Sampling Method	Description
12	28	Same as core 9	Black silty mud with some fine brown sand interspersed.
13	38	Same as core 9	Medium to fine sand interspersed with black mud.
14	22	Same as core 9	Fine textured grey mud and brownish silt.
15	19	Same as core 9	Black mud interspersed with brown silt.
16	12	Same as core 9	Medium to fine sand.
17	18	Same as core 9	Fine brown sand with grey silty-mud throughout.
18	12	Same as core 9	Grey-brown silty-mud.
19	20	Same as core 9	Grey silty-mud throughout Worm at the 3 cm level.
20	16	Same as core 9	Black mud interspersed with grey clay-mud.
21	18	Same as core 9	Black mud interspersed with grey clay-mud.
22	22	Same as core 9	Fine textured grey mud.
23	32	Same as core 9	Grey mud.
24 (a)	25	Same as core 9	Fine textured grey mud.
24 (b)	26	Same as core 9	Fine textured grey mud.
25	25	A 2" acrylic tube was pounded into an area of active sedimentation ie sand bars within the river	Coarse sand with fine brown sand interspersed.
26	50	Same as core 25	Grey-brown medium to coarse sand throughout.
27	52	Same as core 25	Yellow-brown coarse sand. Organic inclusions at 24 and 28 cm.
28	25	Same as core 25	Medium to fine grey sand in the top 10 cm. The remainder was coarse sand.

TABLE 2 (continued)

Core No.	Length cm	Sampling Method	Description
29	32	Same as core 25	Coarse grey sand
Box Core	22	Soutar-Bruland Box Curing technique with slow sediment entry.	Uniform thick grey clay.
Grab No.	**Where Sampled**	**Sampling Method**	**Description**
1A	0-2 cm.	Dietz-Lafond Grab	Blackish ooze. Smelled of H_2S and contained some wood fibers.
1B	2-4 cm.	"	Grey clay.
2A	0-2 cm.	"	Grey brown mud (ooze).
2B	2-4 cm.	"	Hard grey clay.
3A	0-2 cm.	"	Blackish ooze. No smell of H_2S.
3B	2-4 cm.	"	Hard grey-black clay.
4	0-4 cm.	"	No stratigraphy. Black silty sand. Smelled of H_2S.
5A	0-2 cm.	"	Yellow-grey ooze with some black streaks.
5B	2-4 cm.	"	Hard grey clay.
6A	0-2 cm.	"	Thin black surface layer of ooze smelling of H_2S. Also contained pieces of wood and small rocks.
6B	2-4 cm.	"	Hard grey clay.
7A	0-2 cm.	"	Grey ooze with some black streaks.
7B	2-4 cm.	"	Grey clay-mud.
8A	0-2 cm.	"	Yellow grey oozy-mud.
8B	2-4 cm.	"	Hard grey clay.

TABLE 3

Mercury concentrations as a function of depth for the Howe Sound cores

Depth cm	Mercury ng g^{-1} Dry Weight	% Moisture	Loss on Ignition Dry Weight
0-2	585	Core #1	
2-4	585		
4-6	970		
6-8	1060,1030	22.4	1.0
8-10	815		
10-12	830		
12-14	930		
14-16	1580,700	18.9	<0.5
16-18	735		
18-20	470		
20-22	70		
22-24	25		
24-26	155		
		Core # 2	
0-2	630		
2-4	910		
4-6	830		
6-8	1390,1530	17.0	<0.5
8-10	1030,840	16.5	<0.5
8-10		17.1	<0.5
10-12	595		
12-14	725		
14-16	170		
16-18	85		
18-20	15		
20-22	15		
		Core # 3	
0-2	1260,800	14.0	<0.5
2-4	1270,1060	14.4	0.5

Core # 3 cont'd.

4-6	705		
6-8	20		
8-10	15		
10-12	30		
12-14	115		
14-16	30		
16-18	15		
18-20	30		
20-22	30		
22-24	20		
24-26	25		
26-28	20		
28-29	35		
	Core # 4		
0-2	250		
2-4	165		
4-6	85		
6-8	105		
8-10	95		
10-12	140		
12-14	75		
14-16	75		
	Core # 5		
0-2	150		
2-4	225		
4-6	285		
6-8	515		
8-10	370		
10-12	480		
12-14	410		
14-16	355		
16-18	355		
18-20	350		
	Core # 6		
0-2	1080,635	47.8	15.3
2-4	1730,420	50.0	14.4

Core # 6 cont'd.

4-6	1260,1850	44.0	14.1
4-8	1730,1850	32.2	4.5
8-10	1770,1930	35.8	5.7
10-12	665		
12-14	75		
14-16	60		
16-18	25		
18-20	20		
20-22	15		
22-24	15		
24-26	30		
		Core # 7	
0-2	295		
2-4	300		
4-6	445		
6-8	670		
8-10	1500,1120	20.8	1.8
10-12	880		
		Core # 8	
0-2	6270,7760	30.1	2.9
2-4	8810,5690	29.5	2.0
Depth cm	Mercury ng g^{-1} Dry Weight	% Organic Carbon	
		Core # 9	
0-4	275		
		Core # 10	
0-2	345	1.20	
2-4	335		
4-6	360		
6-8	375		
8-10	345		
10-12	360	1.04	
12-14	285		
14-16	320		
16-18	290		
18-20	165		
20-22	115		

22-24	155	0.59
	Core # 11	
0-2	720	0.85
2-4	320	
4-6	60	
6-8	65	0.34
8-10	50	
10-12	45	
12-14	60	
14-16	90	
16-18	55	
18-20	60	0.50
	Core # 12	
0-2	55	0.34
2-4	65	
4-6	55	
6-8	75	
8-10	50	
10-12	85	
12-14	65	0.47
14-16	70	
16-18	50	
18-20	70	
20-22	50	
22-24	80	
24-26	60	
26-28	70	0.32
	Core # 13	
0-2	165	1.12
2-4	245	
4-6	225	
6-8	220	
8-10	190	
10-12	120	
12-14	100	
14-16	120	
16-18	110	

Core # 13 cont'd

18-20	155	
20-22	110	0.83
22-24	225	
24-26	125	
26-28	100	
28-30	95	
30-32	110	
32-34	85	
34-36	100	
36-38	145	0.76

Core # 14

0-2	180	1.13
2-4	150	
4-6	150	
6-8	175	
8-10	195	1.37
10-12	180	
12-14	140	
14-16	260	
16-18	330	
18-20	340	
20-22	330	0.54

Core # 15

0-2	200	2.00
2-4	420	1.67
4-6	750	
6-8	890	4.63
8-10	1030	0.69
10-12	340	
12-14	275	
14-16	210	
16-18	230	0.67
18-20	500	

	Core # 16
0-2	55
2-4	60
4-6	40
6-8	55
8-10	55
10-12	60
	Core # 17
0-2	60
2-4	50
4-6	50
6-8	50
8-10	55
10-12	65
12-14	45
14-16	70
16-18	50
	Core # 18
0-2	100
2-4	75
4-6	65
6-8	90
8-10	90
10-12	155
	Core # 19
0-2	140
2-4	120
4-6	90
6-8	70
8-10	75
10-12	125
12-14	90
14-16	95
16-18	75
18-20	85

	Core # 20	
0-2	465	1.10
2-4	110	
4-6	115	
6-8	120	0.83
8-10	130	
10-12	165	
12-14	260	0.79
14-16	795	0.75
	Core # 21	
0-2	140	1.06
2-4	160	
4-6	225	
6-8	335	0.98
8-10	110	
10-12	165	
12-14	170	1.06
14-16	295	
16-18	930	1.06
	Core # 22	
0-2	165	1.15
2-4	340	
4-6	1060	0.90
6-8	1100	
8-10	1000	
10-12	590	0.74
12-14	160	
14-16	185	
16-18	535	0.88
18-20	730	0.73
20-22	110	0.73
	Core # 23	
0-2	280	1.69
2-4	135	
4-6	140	
6-8	100	

Core # 23 Cont'd.

8-10	125	
10-12	105	
12-14	100	1.11
14-16	140	
16-18	130	
18-20	95	
20-22	100	
22-24	95	
24-26	90	
26-28	95	
28-30	80	
30-32	95	1.15

Core # 24 (a)

0-2	125	
2-4	125	
4-6	140	
6-8	125	
8-10	110	
10-12	110	
12-14	95	
14-16	95	
16-18	110	
18-20	140	
20-22	125	
22-24	110	
24-26	125	
26-28	110	1.34

Core # 24 (b)

0-2	110	1.35
2-4	95	
4-6	125	
6-8	100	
8-10q	60	
10-12	100	
12-14	90	
14-16	95	1.40

	Core # 24(b) cont'd	
16-18	100	
18-20	135	
20-22	95	
22-24	110	
24-26	105	
26-28	135	1.34
	Core # 25	
0-2	45	
2-4	35	0.11
4-6	55	
10-12	30	
13-15	35	
25-27	25	
	Core # 26	
0-2	30	
2-4	25	0.12
4-6	25	
10-12	30	
25-27	25	
48-50	40	
	Core # 27	
0-2	35	
2-4	30	0.56
4-6	30	
10-12	30	
24-26	35	1.12
50-52	30	
	Core # 28	
0-2	30	
2-4	30	0.21
4-6	25	
10-12	25	
12-14	25	
23-25	20	

	Core # 29	
0--2	15	
2-4	15	0.06
4-6	35	
10-12	30	
14-16	35	
30-32	40	

TABLE 4

Mercury concentration as a function of depth in the box core obtained in Howe Sound off Watts Point.

Depth cm	Mercury in Sediment $\mu g\ g^{-1}$ (dry wt)	Organic Carbon (dry wt)
0-1	190	0.85
0-2	220	0.90
1-3	190	0.88
2-4	205	
3-5	235	
4-6	275	
5-7	470	
6-8	555	
7-9	965	
8-10	870	0.72
9-11	875	
10-12	1050	0.94
11-13	800	
12-14	885	0.82
13-15	920	
14-16	215	
15-17	700	
16-18	455	
17-19	90	
18-20	110	
19-21	190	
20-22	90	

TABLE 5

Mercury results obtained by Chemex compared with average results reported by many laboratories during interlaboratory quality control study number 18.

Sediment Sample	Mercury Concentration ng g^{-1} (Chemex) (dry wt)	Average Mercury Concentration ng g^{-1} (dry wt)	Standard Deviation ng g^{-1}
1	95	87	24
2	190	184	28
3	250	231	31
4	670	674	73
5	650	641	78

TABLE 6

Observed ^{210}Pb and Porosity (ϕ) of sediment in box core (see table 4)

Depth z cm	Corrected Depth, z' cm	Total ^{210}Pb dpm g^{-1}	Excess ^{210}Pb dpm g^{-1}	Average Excess dpm g^{-1}	Porosity
0 - 3	0 - 3.2	3.9 ± .06	2.0 ± .11	2.06	0.733
		4.1 ± .05	2.2 ± .10		
		3.9 ± .04	2.0 ± .09		
		3.8 ± .06	1.9 ± .11		
		4.1 ± .11	2.2 ± .16		
3 - 6	3.2 - 7.2	4.1 ± .05	2.2 ± .10	2.23	0.624
		4.2 ± .04	2.3 ± .09		
		4.1 ± .11	2.2 ± .16		
6 - 9	7.2-11.5	3.8 ± .05	1.9 ± .10	1.88	0.616
		3.8 ± .06	1.9 ± .11		
		3.9 ± .10	2.0 ± .15		
		3.6 ± .12	1.7 ± .17		
9-12	11.5-16.0	2.6 ± .03	0.7 ± .08	0.7	0.599
		2.6 ± .06	0.7 ± .11		
12-15	16.0-20.5	2.5 ± .07	0.6 ± .12	0.6	0.605
15-18	20.5-25.0	2.5 ± .04	0.6 ± .09	0.2	0.591
		1.7 ± .06	-0.2 ± .11		
18-21	25.0-29.7	1.7 ± .05			0.580
		1.9 ± .04			
		2.1 ± .05			
21-24	29.7-34.5	1.6 ± .05			0.598
		2.6 ± .05			

Supported ^{210}Pb = 1.9 ± .05

TABLE 7

Mercury analysis of grab samples taken during Vector Cruise OC-77-IS-004

Sample Number	Station	Mercury ng g^{-1} (dry wt)
1A	HV-2	120
1B	HV-2	140
2A	HV-3	170
2B	HV-3	140
3A	HV-4	130
3B	HV-4	140
4	H-1	60
5A	H-3	170
5B	H-3	130
6A	H-4	130
6B	H-4	150
7A	H-5	130
7B	H-5	120
8A	H-6	70
8B	H-6	70

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13. Porosity profile for the box core taken off Watts Point.
14. Mercury as a function of organic carbon content for the cores taken during the study.

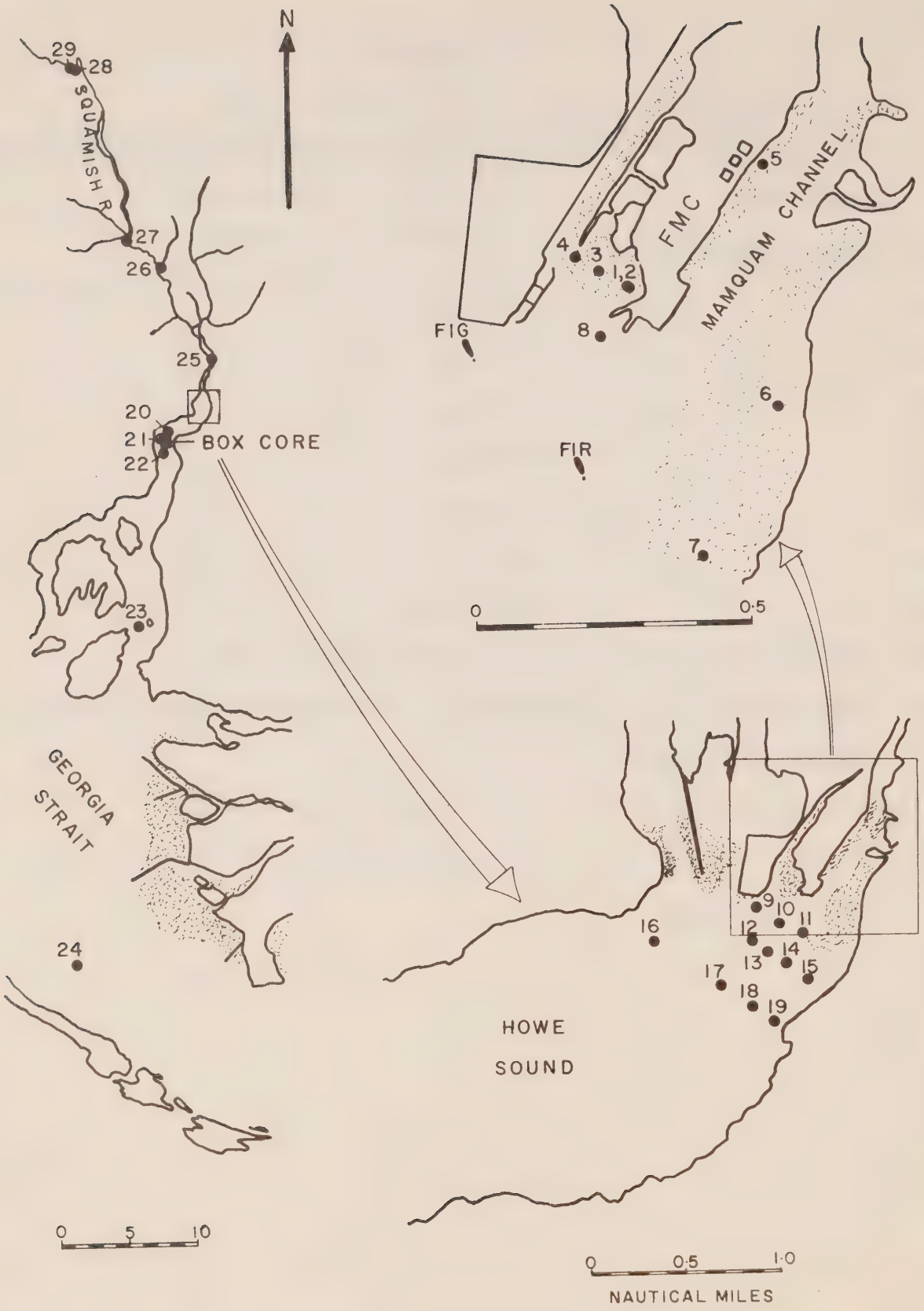


FIGURE 1. Locations where a core was obtained during the study.

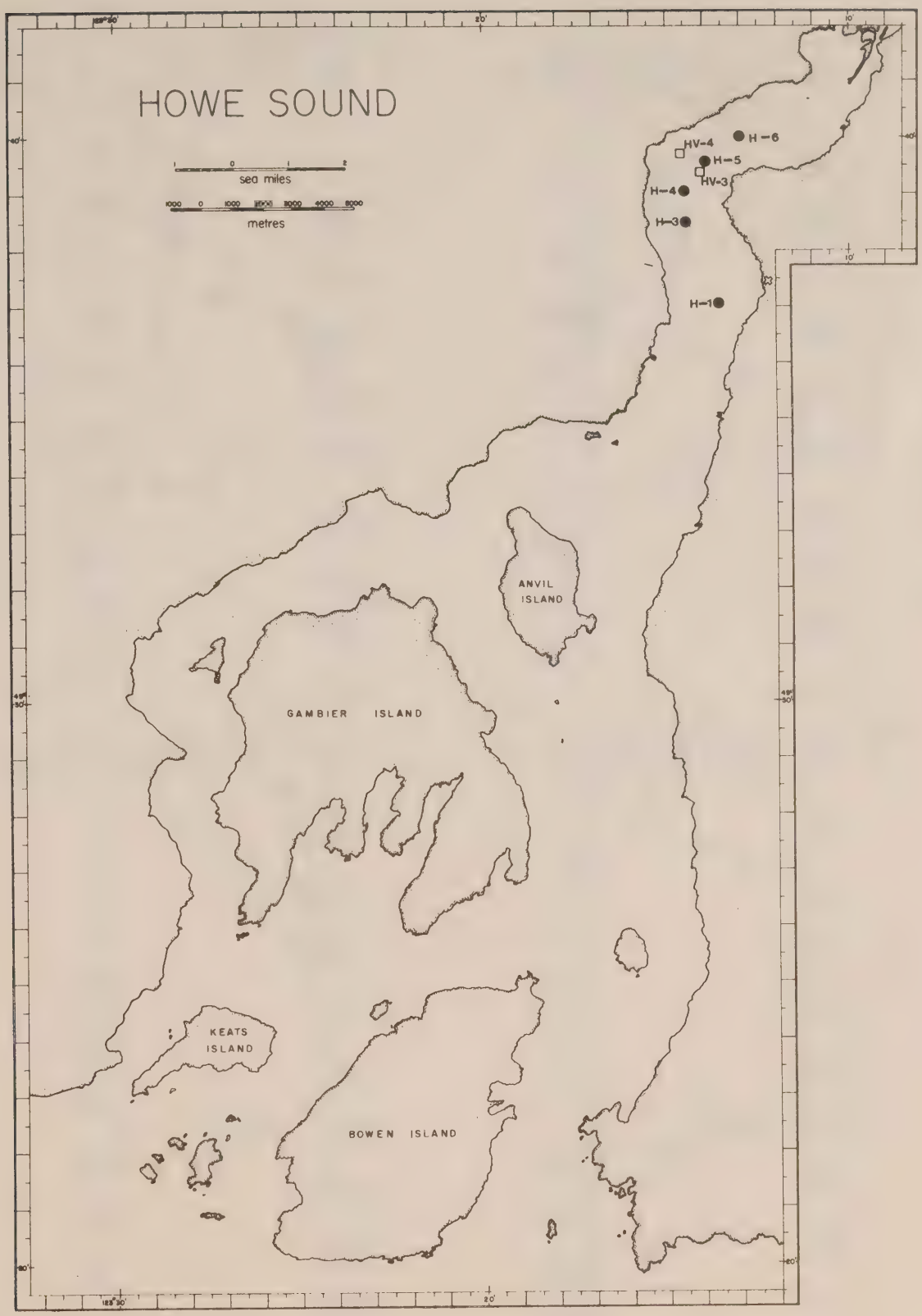


FIGURE 2. Locations where a grab sample was obtained during Ocean Chemistry Cruise OC-77-IS-004.

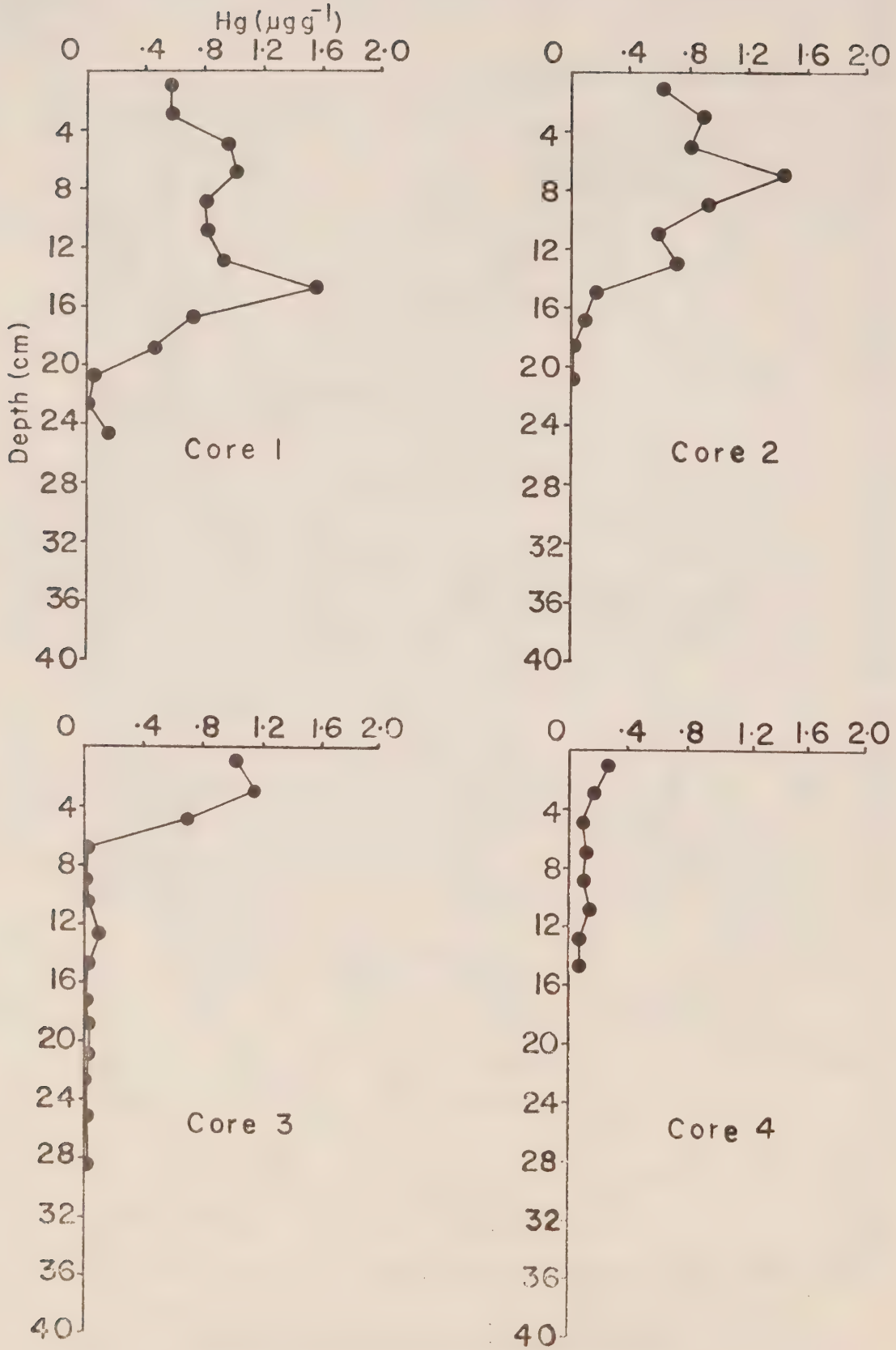


FIGURE 3. Mercury profiles for cores 1 - 4.

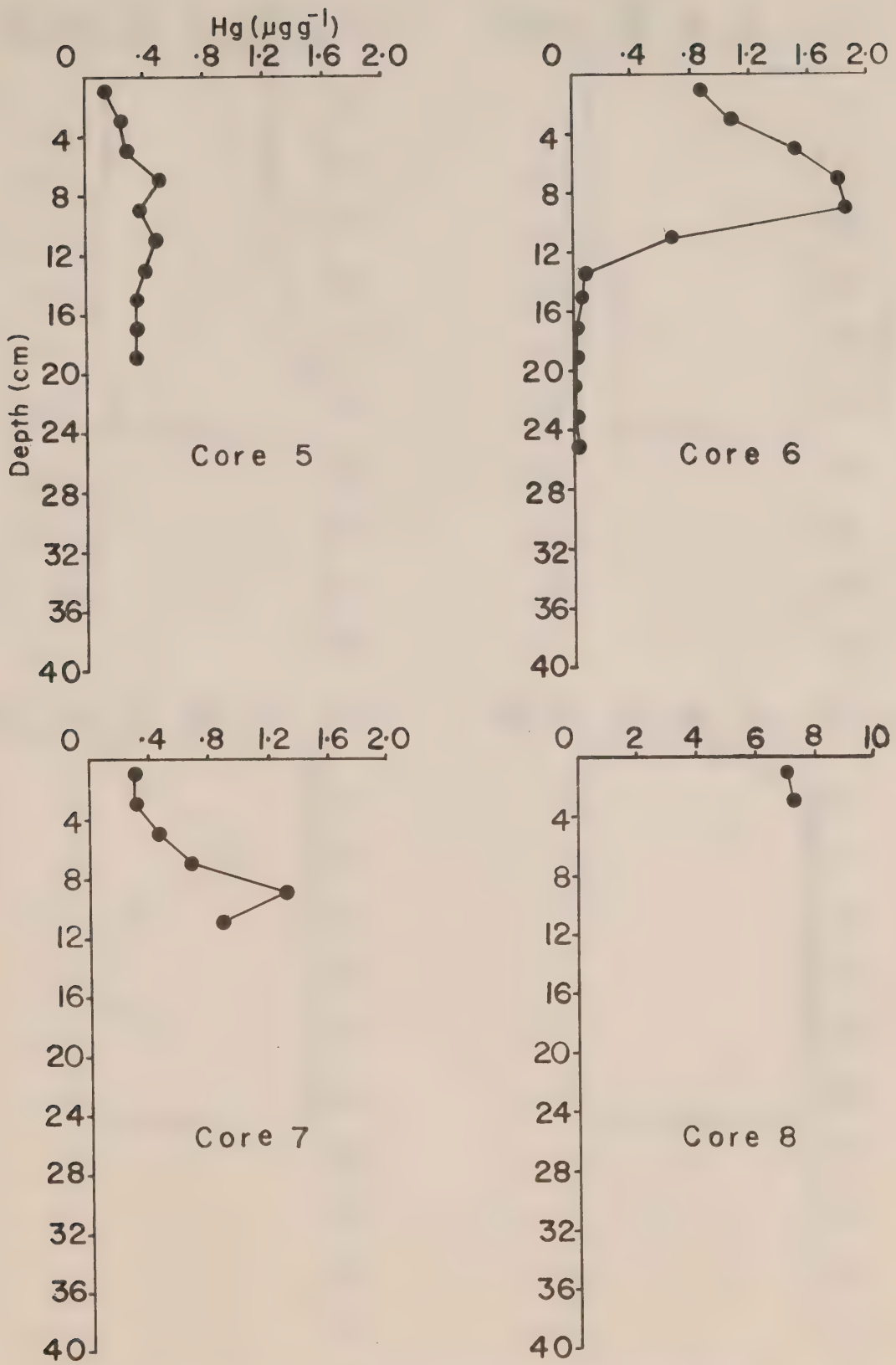


FIGURE 4. Mercury profiles for cores 5 - 8.

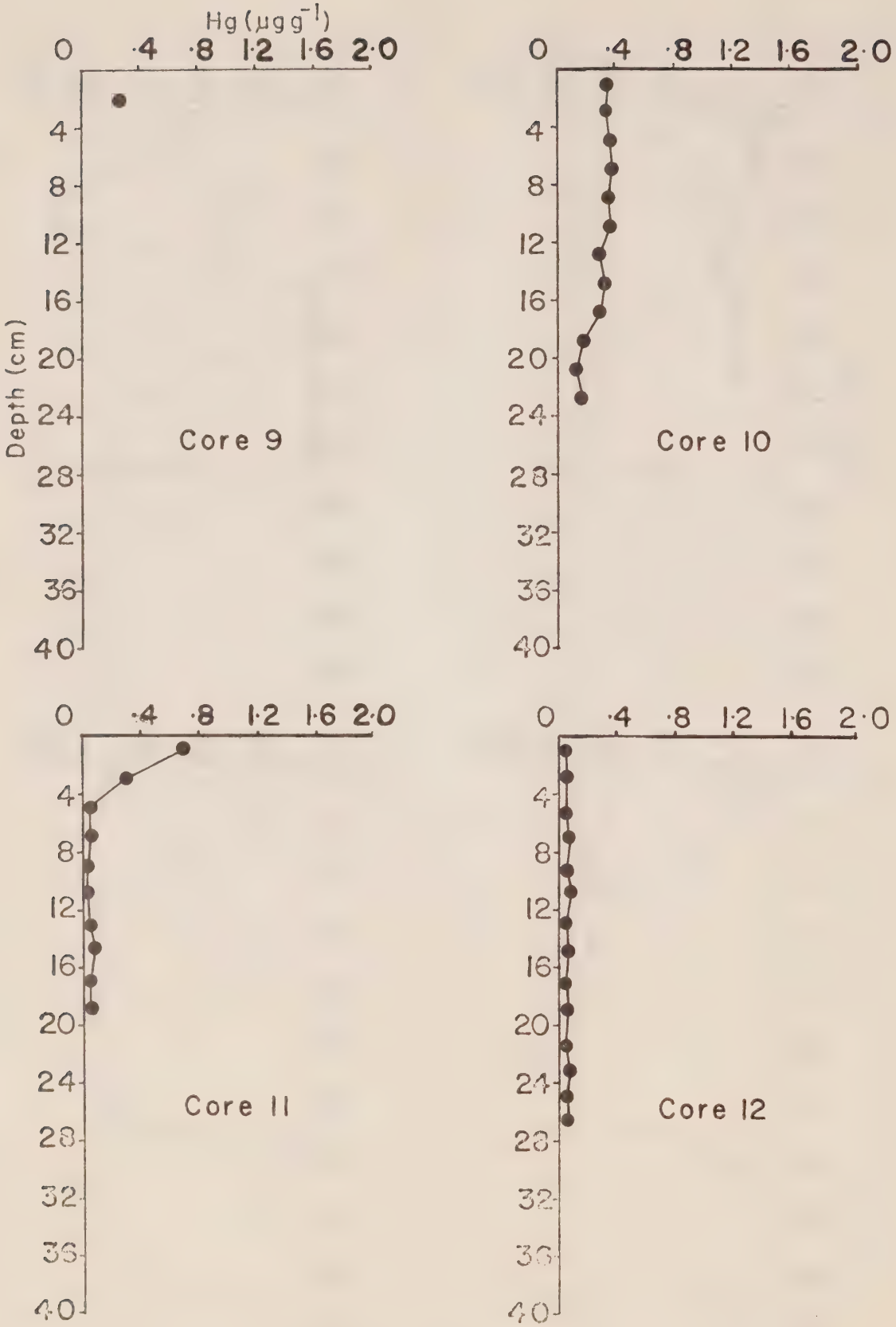


FIGURE 5. Mercury profiles for cores 9 - 12.

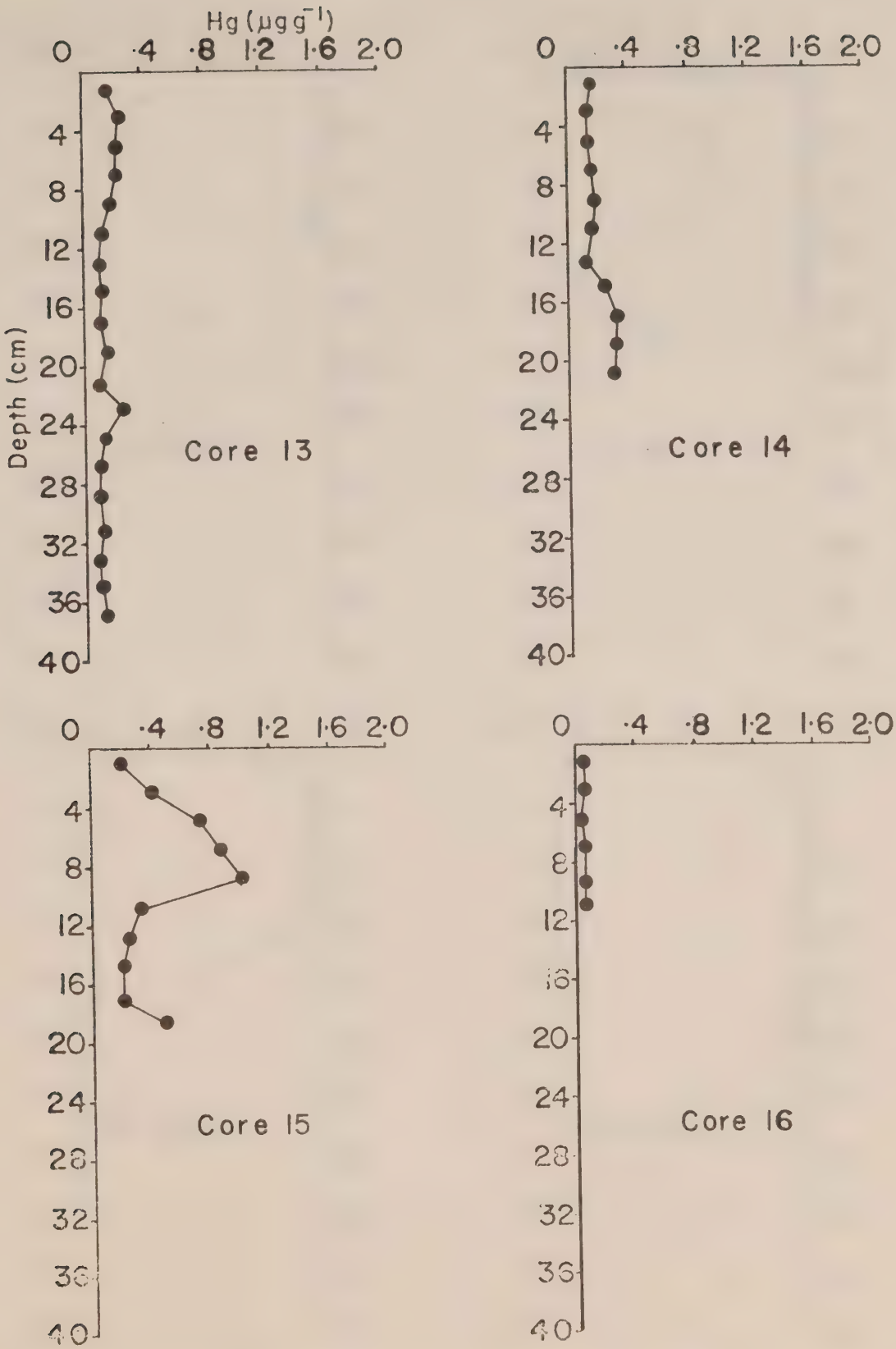


FIGURE 6. Mercury profiles for cores 13 - 16.

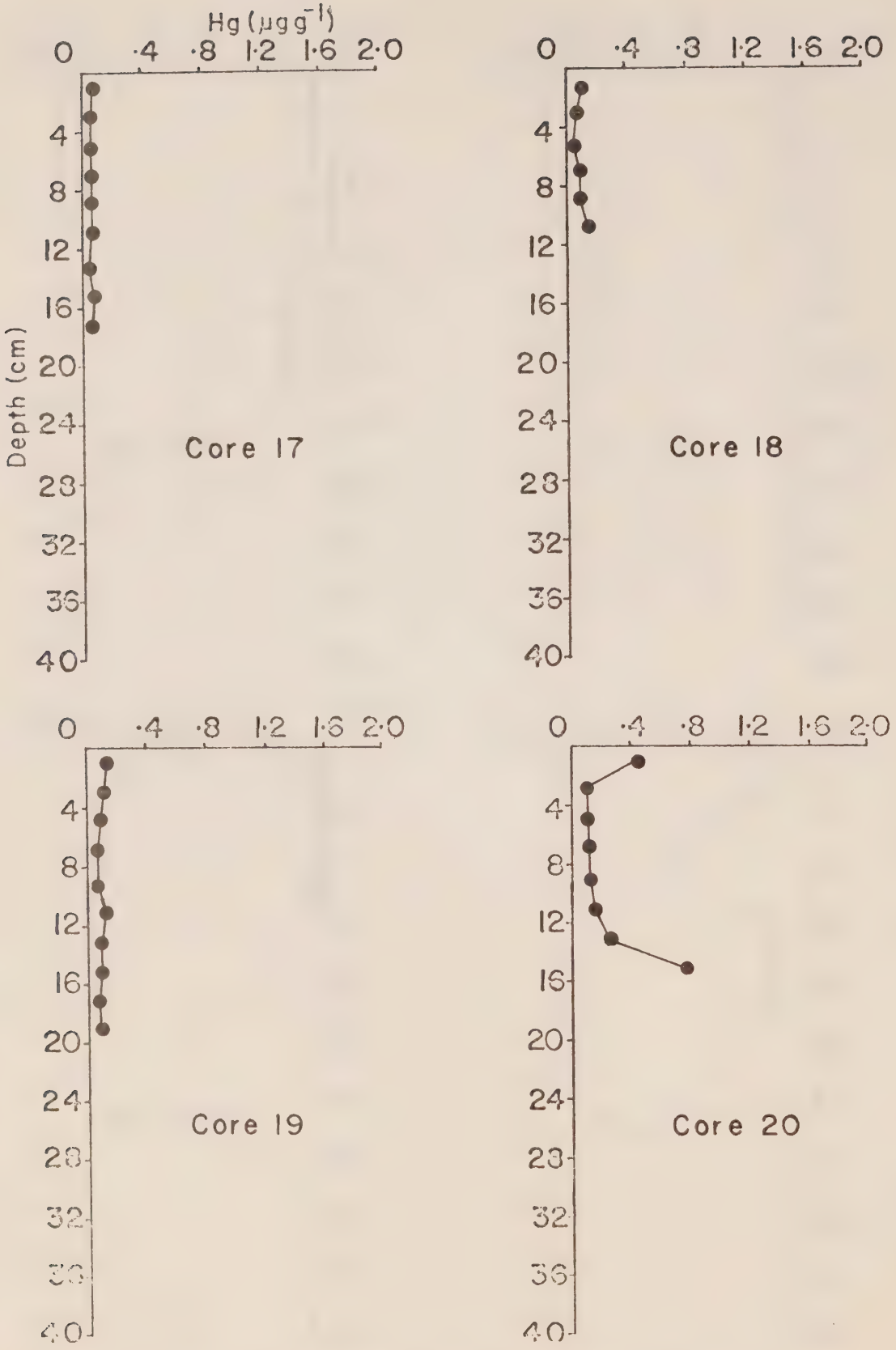


FIGURE 7. Mercury profiles for cores 17 - 20.

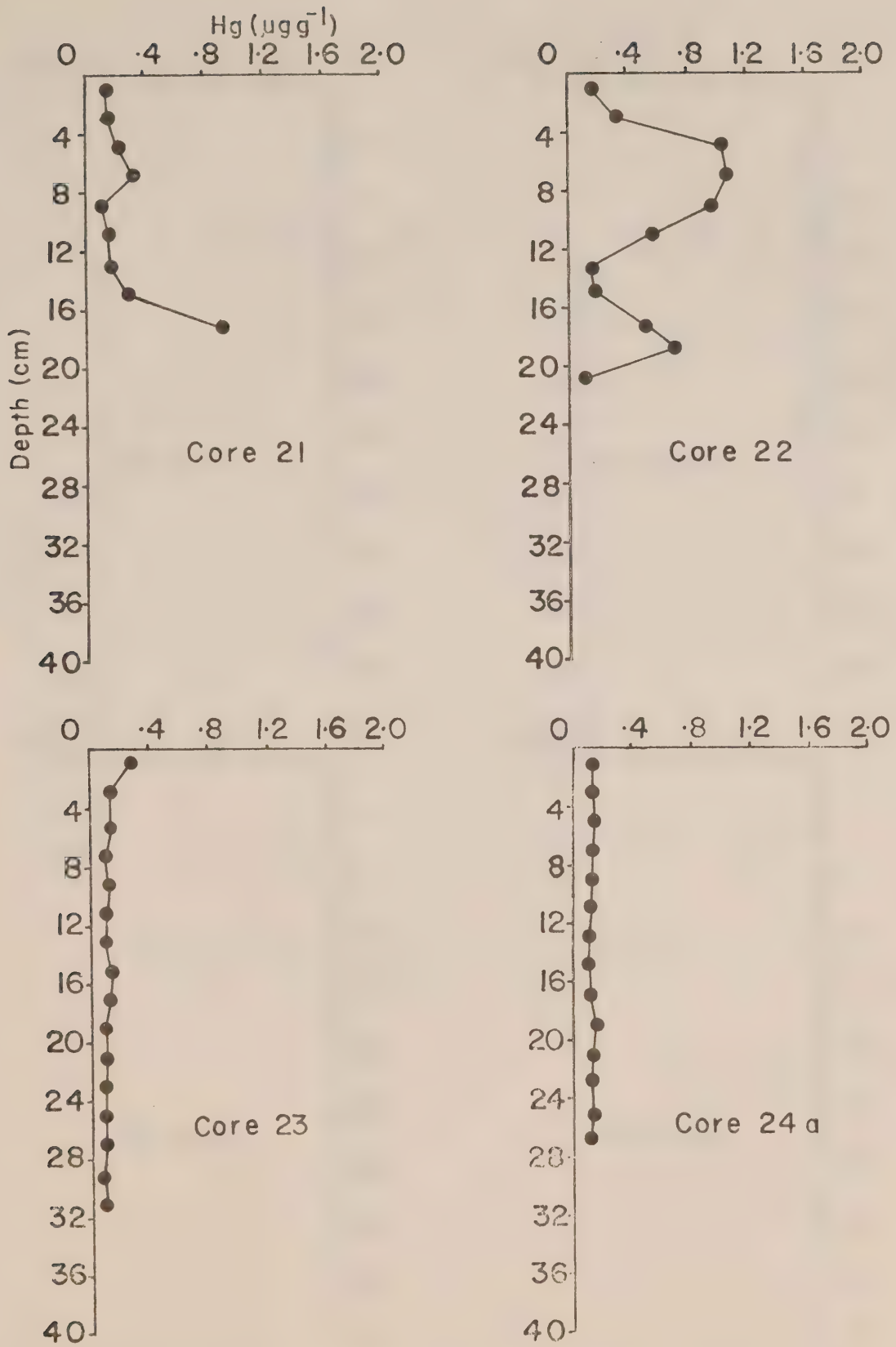


FIGURE 8. Mercury profiles for cores 21 - 24a.

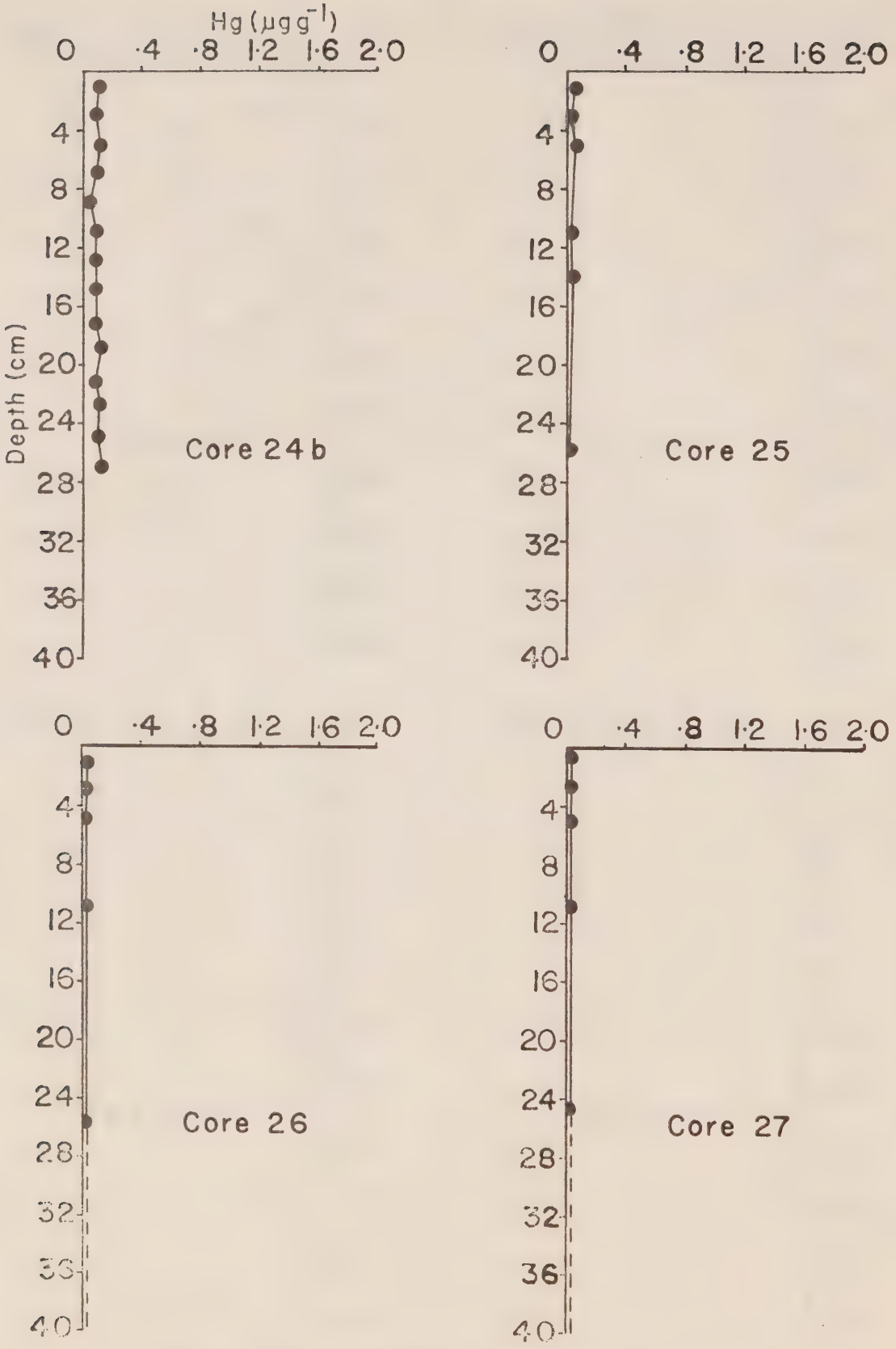


FIGURE 9. Mercury profiles for cores 24b - 27.

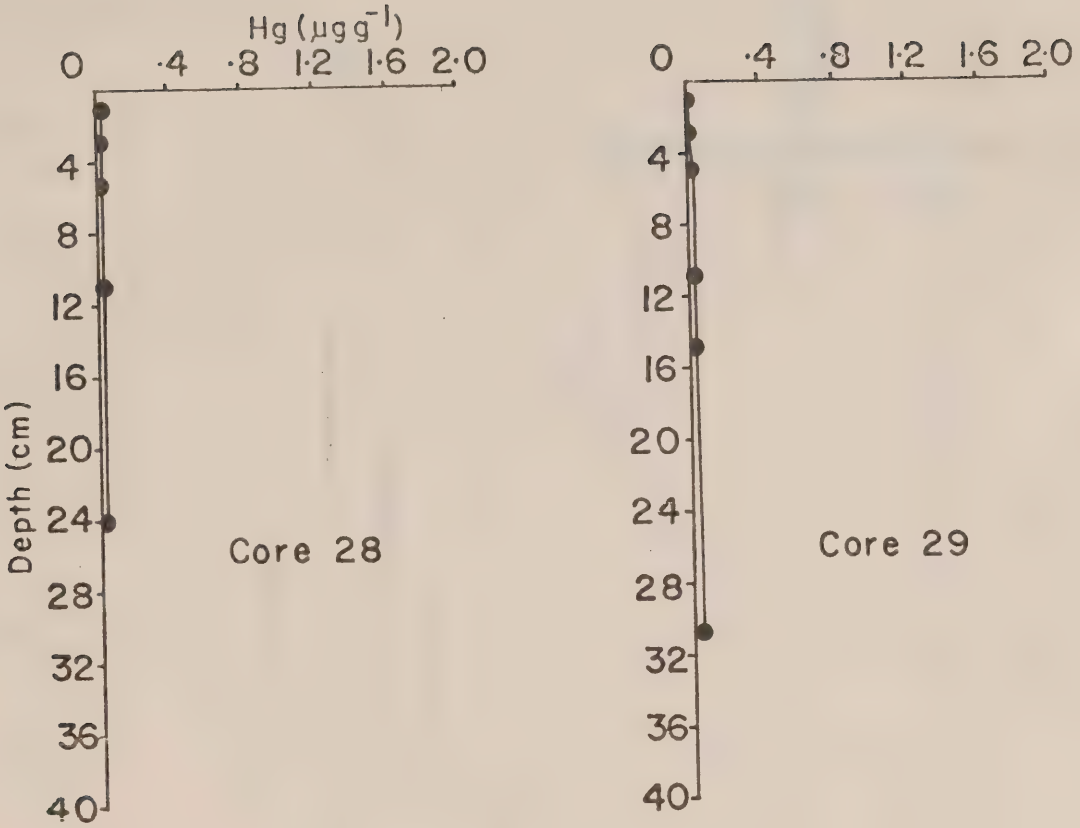


FIGURE 10. Mercury profiles for cores 28 and 29.

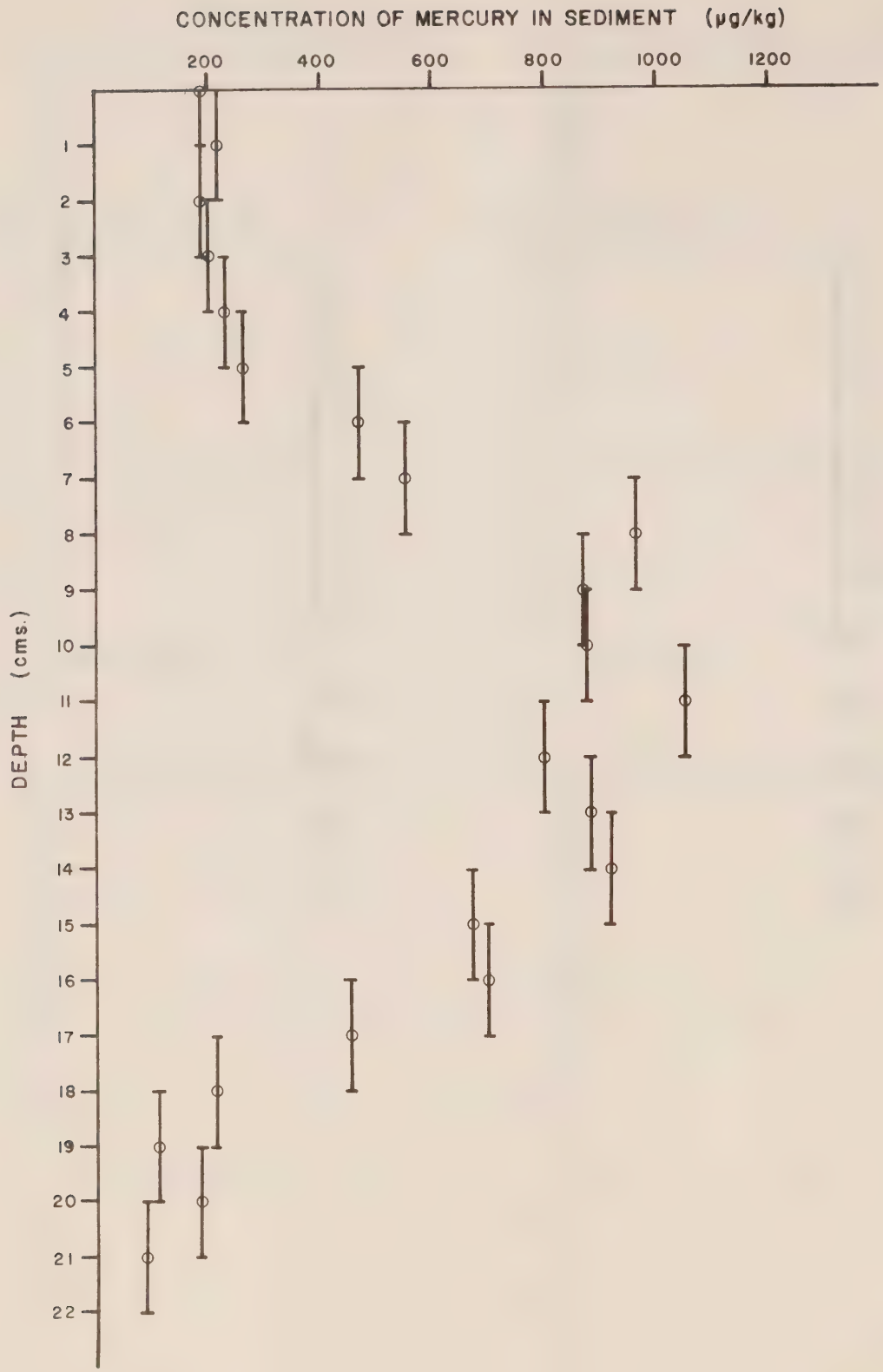


FIGURE 11. Mercury profile for the boxcore taken off Watts Point.

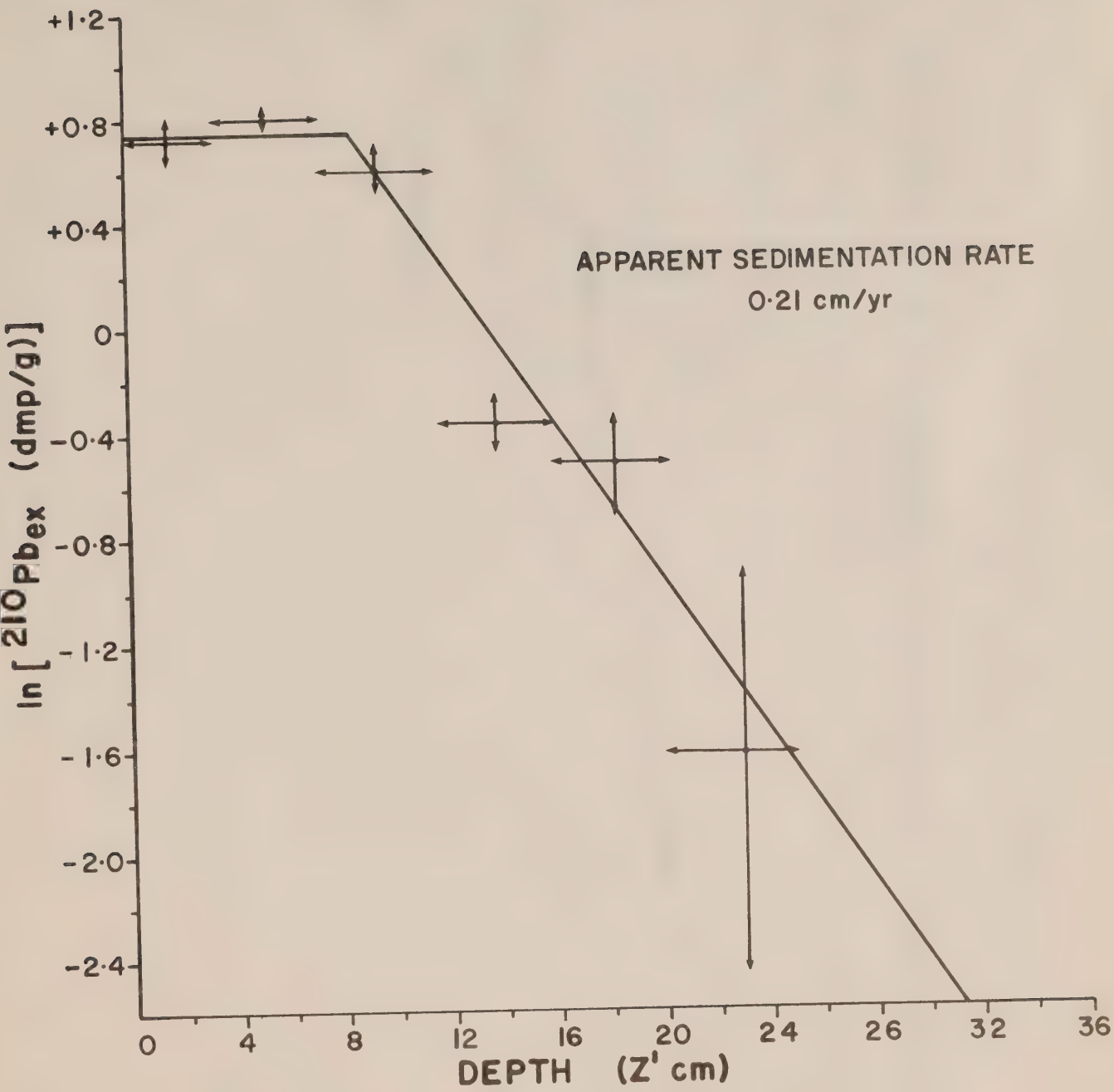


FIGURE 12. Sedimentation rate as determined by ^{210}Pb geochronology for the boxcore taken off Watts Point.

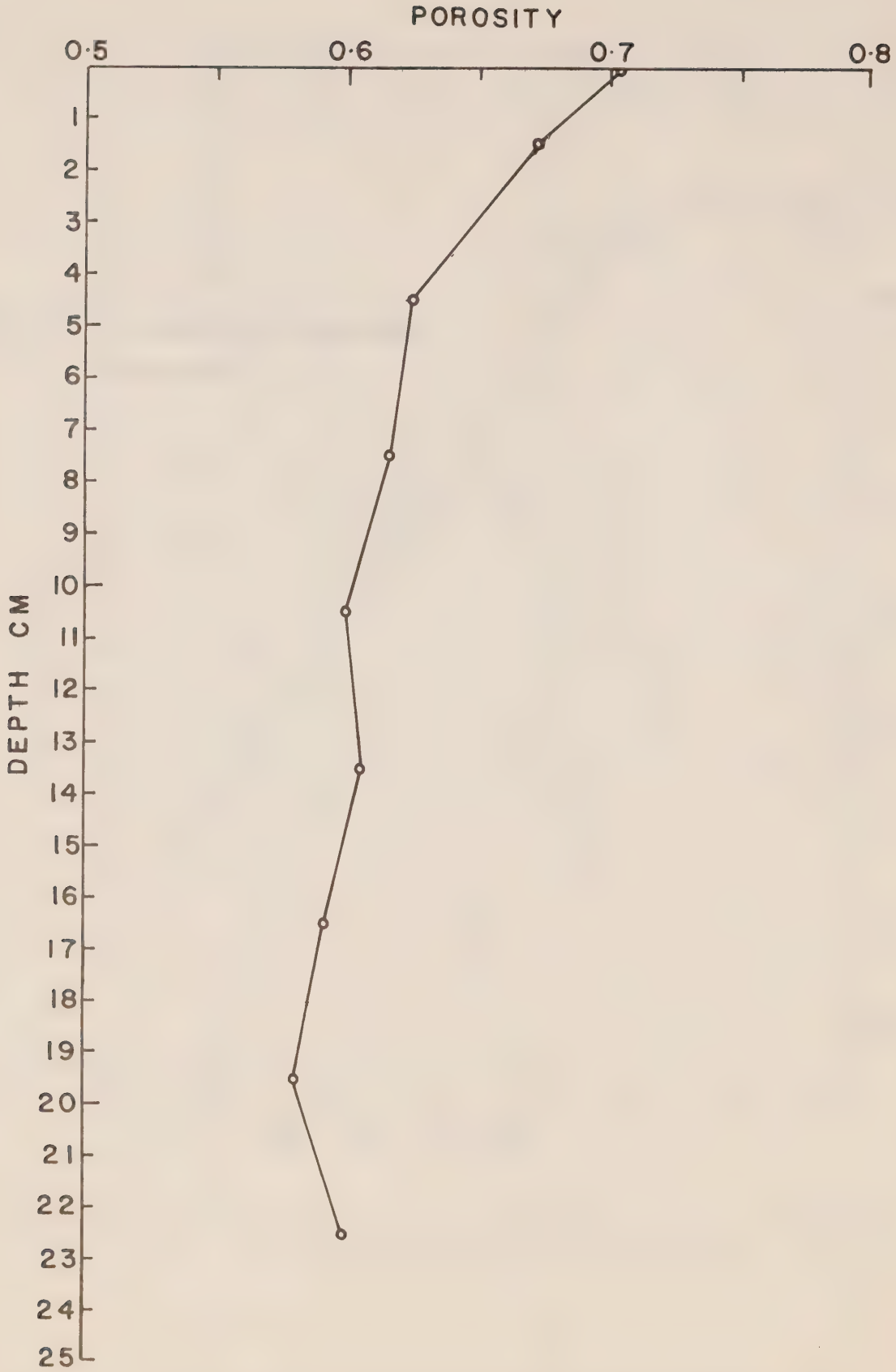


FIGURE 13. Porosity profile for the boxcore taken off Watts Point.

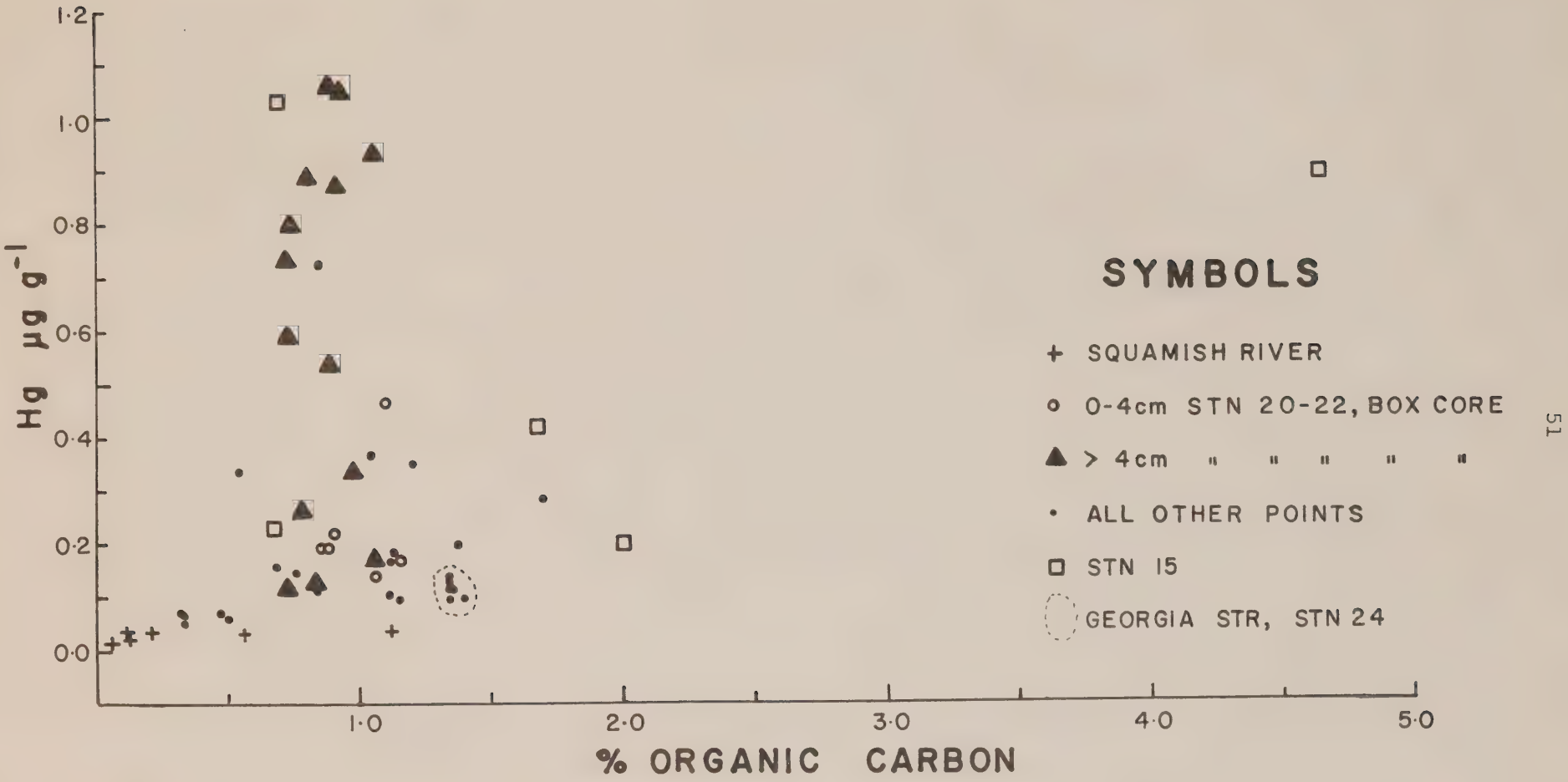


FIGURE 14. Mercury as a function of organic carbon content for the cores taken during the study.

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OCEANOGRAPHIC DATA REPORT
D'IBERVILLE FIORD
ELLESMERE ISLAND, N.W.T.

March 1977

by

Frozen Sea Research Group



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ABSTRACT

Data collected during March 1977 at eleven stations in d'Iberville Fiord are presented. The data include salinity and temperature obtained with a CTD and concentrations of dissolved oxygen, silicates, phosphates, nitrates, deuterium and tritium.

Introduction

This is the fifth oceanographic data report containing information from d'Iberville Fiord, Ellesmere Island, NWT. The first report (Frozen Sea Research Group of the Institute of Ocean Sciences, Patricia Bay, 1973) covers the period March to April 1973; the second (F.S.R.G. 1975) covers the period March to April 1974 and August, 1974; the third (F.S.R.G. 1976) covers the period March to April, 1975; and the fourth (F.S.R.G. 1976) covers March 1976 and includes data from Greely Fiord and Eureka Sound. All data in this present report were obtained in d'Iberville Fiord in March 1977.

D'Iberville Fiord is an appendage to the Nansen Sound - Greely Fiord system on northwestern Ellesmere Island. The fjord, shown in Figure 1, is located at 80°30'N, 79°00'W and is about 35 km by 6 km with an area of 213 km^2. A longitudinal section of the fjord is also shown in Figure 1. A sill near the mouth of the fjord reaches a maximum depth near 200 metres. The sill isolates the deep water within the fjord which is marked by values of salinity and temperature significantly different than those at similar depths outside the fjord. The maximum depth within the fjord of nearly 560 m occurs just inside the sill.

D'Iberville Glacier enters the fjord as a floating ice shelf, about 2-3 km long which becomes a tightly packed mass of floating blocks at its terminus. The mean flow rate of the glacier has been measured as 1.1 m day^{-1} (Holdsworth, 1976). The advancing glacier fractures the sea ice adjacent to its snout,impeding close approach.

From September to July, the fjord is completely covered by sea ice which remains landfast until shore leads develop in June. The sea ice cover normally consists of extensive young (annual) ice with patches of second-year ice and some rafted and hummocked ice. The depth of snow on the sea ice in 1977 increased from about 20 cm of wind-packed snow at the mouth of the fjord to nearly 60 cm of fluffy powder snow near the glacier. The sea ice thickness reflected this variation in the insulating capacity of the snow cover and decreased from a thickness of 1.9 m at the mouth of the fjord to 0.6 m near the glacier.

The physical oceanography of the area has been reported on by Ford and Hattersley-Smith (1965), Hattersley-Smith and Serson (1966), Lake and Walker (1973), and Lake and Walker (1976). Data included in this report are conductivity, temperature, pressure and the derived variables salinity, sigma-T and sound velocity. In addition profiles of the concentration of the inorganic micronutrients: silicate, nitrate and phospate as well as dissolved oxygen, deuterium and tritium concentrations are presented in Figures 2-7 and Table 2. Other data collected but not reported here concerned meteorology, tides, runoff, ice movements, the structure of the fluid motion beneath growing sea ice, and dissolved nitrogen concentration.

The oceanographic stations are shown in Figure 1 and the experiment identification number for each station is listed in Table 1. It should be noted that the station numbers do not increase sequentially from the glacier to the mouth of the fjord, but increase chronologically with the time of occupation.

Data Collection and Recording

Data were collected over a period of 10 days using a specially equipped Canadair CF-23 tracked vehicle towing an oceanographic sled. The collection of oceanographic data from such vehicle trains is described by Lewis (1971).

Conductivity (C), temperature (T) and pressure or depth (D) measurements were made with a Guildline Model 8101 A CTD unit. To calibrate the CTD, water samples were taken at each cast in regions of minimum vertical property gradients with Knudsen bottles. The conductivity of these samples was determined with a Hytech model 6220 bench salinometer calibrated with Standard Sea Water. Four wire thermistors used to calibrate the CTD were themselves calibrated in a triple point cell. A detailed discussion of our methods of in situ measurements of conductivity and temperature can be found in Lewis and Sudar (1972). The principal recording system for output of the Guildline instrument was a Vidar 5400 data logger with printed and punched paper tape output.

All water samples were collected from tin-plated Knudsen bottles modified to be hung directly on armoured CTD cable. Oxygen samples were drawn immediately and NaI-NaOH and $MnCl_2$ reagents added within 1 minute. The volumetric flasks were twice shaken and stored at about ±5°C until they could be acidified and titrated at the base camp. The period of storage varied from a few hours to 2 days. Titration was performed with a micro-Winkler apparatus following the procedure of the U.S. Navy Hydrographic Office (1968).

Inorganic micronutrient samples were taken in 20 ml tubes rinsed 3 times. Four tubes were used for each sample: 2 glass and 2 plastic. Silicate samples were taken from the plastic tubes while nitrate and phosphate were taken from the glass tubes. All nutrient samples were stored out-of-doors where the air temperature averaged about -40°C. The samples were analyzed on a Technicon II auto analyser at the Ocean Chemistry Division of the Institute of Ocean Sciences according to the Technicon method outlined in their manual.

Samples were collected in polyethelyne wide-mouthed jars for determination of deuterium and tritium concentrations. These determinations were performed at the Chalk River Nuclear Laboratories of Atomic Energy of Canada.

Data Processing - Equations

(a) Salinity

The Perkin-Walker equation (Perkin and Walker 1972) was used to calculate salinity (S) from values of conductivity (C), temperature (T) and pressure (P). The equation is a numerical fit to the experimental data of Brown and Allentoft with a linear pressure correction. The temperature values used are with respect to the International Practical Temperature Scale of 1968 (Comité International des Poids et Mesures, 1969).

Where units are C(mmho/cm), T(°C), P(db), S(°/₀₀) the equations used were:

$$C(S,T,0) = C(S,T,P)\left[1 + P\left\{49436 + 1567\,T + 21.33T^2 + 554.43\,C(S,T,P)\right\}^{-1}\right]^{-1}$$

$$R_t = C(S,T,0)\left[29.03916\,(1 + .0297175T + .00015551T^2 - .000000789T^3)\right]^{-1}$$

$$R_o = R_t - 10^{-5}\left[6.0 + 380 \sin \pi\left\{\frac{R_t + .04}{1.03}\right\} + 15 \sin 3\pi\left\{\frac{R_t - .04}{1.03}\right\}\right] \times \left[\begin{array}{l} .0777T - .000454T^2 \\ - .000018T^3 \end{array}\right]$$

$$S = -0.5933 + 32.4822R_o + 3.1106R_o^2 + .004 \sin 2\pi\left[\frac{R_o - .64}{.57}\right]$$

for $0.4 \leq R_o \leq 1.2$

$$S = -0.2166 + 30.686R_o + 5.247R^2{}_o \text{ for } 0.14 \leq R_o \leq 0.4$$

A correction must be added to salinities calculated from the above equations where temperatures fall below +1.0°C. The correction, based on Dauphinee's work is

$$\Delta S = \delta\left[(-3.6 + 5.0T - 2.45T^2)\,10^{-3}\right]$$

where $\delta = 1$ for $-2° < T < 1°C$, $\delta = 0$ for $T \geq 1°C$

(b) Sigma T

The Sigma T equation was taken from the work of Cox, McCartney and Culkin (1970).

$$\sigma_t = \Sigma_i \Sigma_j\ A_{ij}\ T^i\ S^j$$

where Aij are defined below:

i	j	A_{ij}
0	0	$8.00969062 \times 10^{-2}$
0	1	$7.97018644 \times 10^{-1}$
0	2	$1.31710842 \times 10^{-4}$
0	3	$-6.11831499 \times 10^{-8}$
1	0	$5.88194023 \times 10^{-2}$
1	1	$-3.25310441 \times 10^{-3}$
1	2	$2.87941530 \times 10^{-6}$
2	0	$-8.11465413 \times 10^{-3}$
2	1	$3.89187483 \times 10^{-5}$
3	0	$4.76600414 \times 10^{-5}$

(c) Sound Velocity

Sound speed (V) was calculated using Wilson's (1960) equation where salinity (S) is in °/₀₀, pressure (P) in db and V in $msec^{-1}$.

$$V = \Sigma_{ijk} V_{ijk} Q^i (S-35)^j T^k$$

where $Q = 1.00323 + 0.1019716P$

and where $V_{000} = +1449.14$

$V_{001} = +4.5721$

$V_{002} = -4.4532 \times 10^{-2}$

$V_{003} = -2.6045 \times 10^{-4}$

$V_{004} = +y.9851 \times 10^{-6}$

$V_{010} = +1.39799$

$V_{011} = -1.1244 \times 10^{-2}$

$V_{012} = +7.7711 \times 10^{-7}$

$V_{020} = +1.69202 \times 10^{-3}$

$V_{110} = +7.7016 \times 10^{-5}$

$V_{111} = +3.1580 \times 10^{-8}$

$V_{112} = +1.5790 \times 10^{-9}$

$V_{200} = +1.0268 \times 10^{-5}$

$V_{201} = -2.5294 \times 10^{-7}$

$V_{202} = +1.8563 \times 10^{-9}$

$V_{210} = -1.2943 \times 10^{-7}$

$V_{100} = +1.60272 \times 10^{-1}$ $V_{300} = +3.5216 \times 10^{-9}$

$V_{101} = -1.8697 \times 10^{-4}$ $V_{301} = -1.9646 \times 10^{-10}$

$V_{102} = +7.4812 \times 10^{-6}$

$V_{103} = +4.5283 \times 10^{-8}$ $V_{400} = -3.3603 \times 10^{-12}$

Data Format

Cruise: Cruise number assigned by C.O.D.C. is 15-77-22

Title: Location description

Site: Refers to location in Figure 1

Experiment No.: Experiment number. Each CTD drop was assigned a unique experiment number in chronological order.

Lat.: Latitude of experimental site

Long.:: Longitude of experimental site

Date: DDMMYY

GMT: Greenwich mean time HHMM

Ice Thickness: As measured from the bottom lip of the hole to the approximate snow-ice interface.

Depth Incr.: Vertical increment in metres between sequential readings.

Water Depth: From echo sounder.

Depth: Corresponds to depth of the CTD transducers below water level as indicated by wire length. This is equivalent to depth as currents were negligible. The first depth is noted and the remaining depths are calculated.

Press: Pressure in decibars as read by the CTD pressure transducer.

Temp.: Temperature in degrees Centigrade (°C).

Sal.: Salinity in parts per thousand ($^{\circ}/_{\circ\circ}$).

Sigmat: Specific gravity anomaly, sigma-T.

Sound: Speed of propagation of sound in water in $msec^{-1}$.

Accuracy and Precision

The accuracies, or the "truth" of the measurements, and the precisions which include the instrumental resolution plus any human errors are shown in Table 3. The accuracies are ±2σ or 95% confidence intervals about the true value.

TABLE 3

	Accuracy ±2σ	Precision
Temperature	±0.005°C	±0.001°C
Salinity	±0.01°/₀₀	±0.002°/₀₀
Pressure	±2%	±0.1 decibars
Silicate	±0.25 µg-atm/ℓ	±0.02 µg-atm/ℓ
Phosphate	±0.03 µg-atm/ℓ	±0.01 µg-atm/ℓ
Nitrate	±0.5 µg-atm/ℓ	±0.01 µg-atm/ℓ
Oxygen	±0.02 mℓ/ℓ	±0.007 mℓ/ℓ
Deuterium	±0.5 °/₀₀	±0.1 °/₀₀
Tritium	± 10 T.U.	±1 T.U.

Data taken at less than 1 m depth apply to seawater within the ice hole and are subject to much greater errors than those at 3 m depth or below.

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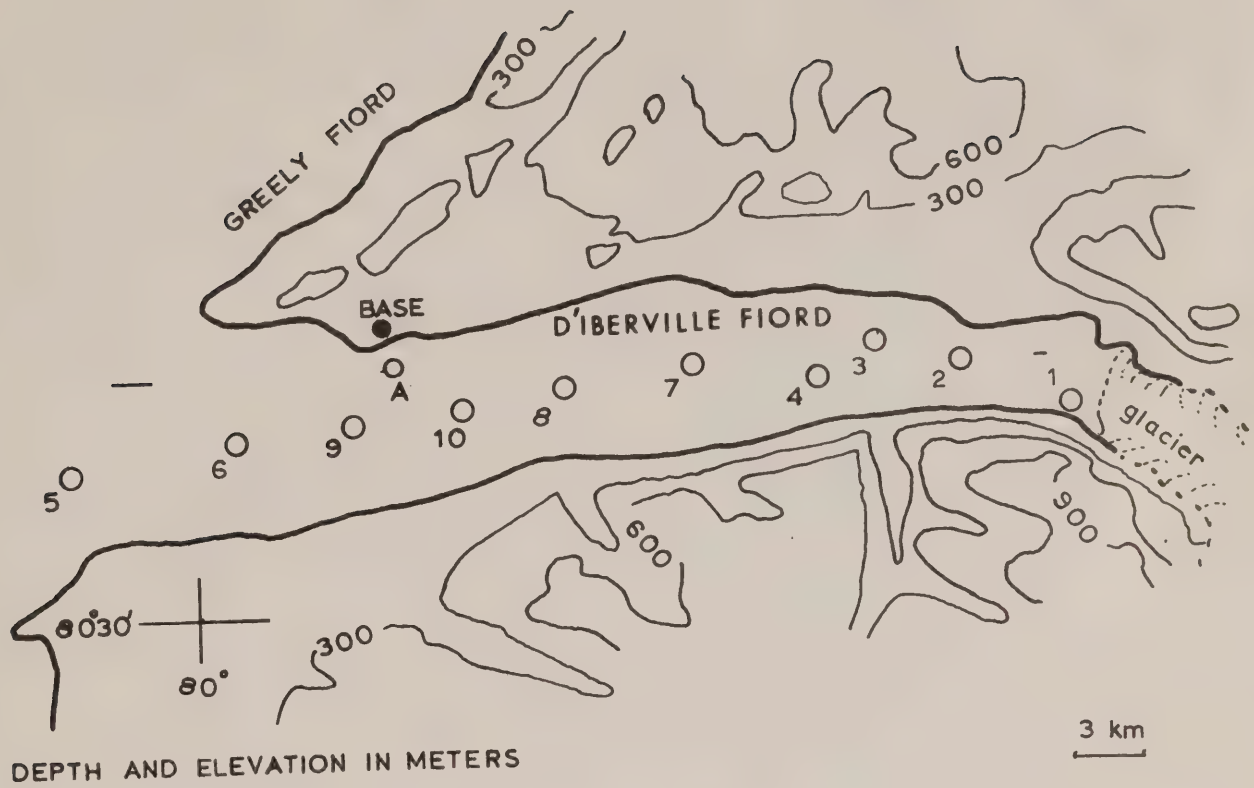
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TABLE 1

Stations and Corresponding Experiment Numbers

Station	Exper. No.
A	2301
1	2302
2	2303
3	2304
4	2305
5	2306
6	2307
7	2308
8	2309
9	2310
10	2311


GREELY FIORD
300
600
300
BASE
D'IBERVILLE FIORD
A
1
2
3
4
5
6
7
8
9
10
glacier
600
900
300
80°30'
80°
3 km
DEPTH AND ELEVATION IN METERS

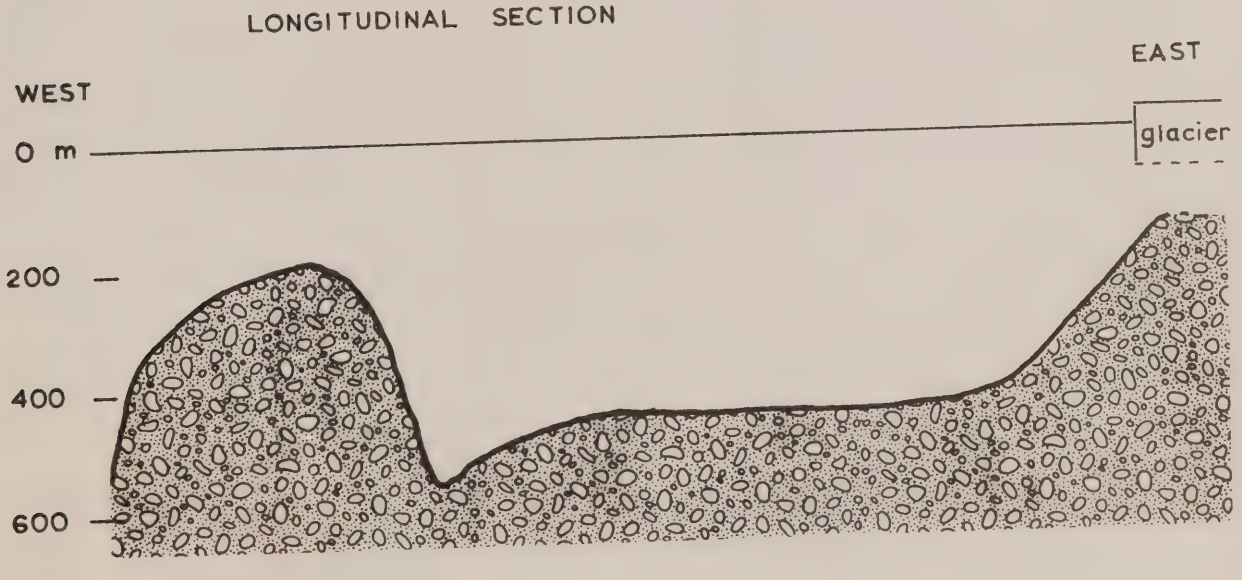

LONGITUDINAL SECTION
WEST
EAST
0 m
glacier
200
400
600

FIGURE 1

NUTRIENT, DISSOLVED OXYGEN AND ISOTOPE DATA AND LONGITUDINAL SECTIONS

TABLE 2

Summary of Chemical Data
d'Iberville Fiord, March 1977*

Depth (m)	phosphate	nitrate (µg-atm/ℓ)	silicate	deuterium δD°/₀₀	tritium TU	oxygen ml/ℓ
STATION 1						
2	0.58	0.6	6.0	-59.0	59	10.66
5	0.78	0.8	7.0	-30.8	61	9.43
10	0.84	0.7	7.1	-27.9	64	9.25
30	1.35	4.7	11.8	-21.9	38	8.27
50	1.68	13.3	20.6	-15.0	32	6.61
80	1.79	16.6	23.3	-11.2	16	-
110	1.48	16.8	21.7	- 9.3	11	5.41
STATION 2						
2	0.61	0.8	6.3	-53.8	57	10.71
5	0.85	0.7	6.6	-34.1	43	9.75
10	0.88	0.4	6.5	-33.5	54	9.65
20	1.03	2.9	10.4	-24.4	37	-
30	1.21	4.1	12.2	-24.9	40	8.53
50	1.47	12.5	20.7	-16.6	8	-
100	1.52	16.0	22.1	-12.1	4	5.35
180	1.22	15.7	18.5	- 4.6	-9	5.27
STATION 3						
2	0.52	0.3	6.2	-58.9	67	11.92
5	0.85	0.4	6.1	-33.2	53	9.84
10	0.87	0.4	6.2	-31.5	46	9.64
20	1.03	3.3	10.2	-22.7	34	8.60
30	1.22	4.1	12.4	-19.0	38	8.58
50	1.75	12.3	22.2	-14.3	5	6.75
100	-	15.9	21.6	- 9.3	-4	5.49
160	1.47	15.8	18.3	- 5.9	-	5.20
STATION 4						
2	0.65	0.45	5.4	-48.0	64	9.77
5	0.86	0.6	6.1	-34.0	49	9.92
10	0.91	0.4	6.3	-31.1	59	9.67
20	1.08	2.9	10.5	-21.9	29	8.66
30	1.24	4.2	12.2	-20.9	34	8.58
50	1.74	12.6	22.3	-15.9	24	6.66
100	1.40	16.1	21.0	- 8.1	-3	5.24
220	0.99	16.4	15.1	- 2.7	-3	4.79

Depth (m)	phosphate	nitrate (µg-atm/ℓ)	silicate	deuterium δD°/₀₀	tritium TU	oxygen ml/ℓ
STATION 5						
2	0.52	0.5	7.3	-	-	13.04
5	0.74	0.6	5.9	-38.9	73	10.40
10	0.69	0.3	5.6	-	-	9.64
20	1.08	3.3	10.9	-23.2	51	8.89
30	1.20	4.7	12.9	-	-	8.57
50	1.69	12.6	23.9	-14.8	23	6.84
100	1.56	16.6	24.9	-	-	5.83
235	0.98	15.4	14.4	- 2.7	-5	5.36
STATION 6						
2	0.38	0.1	7.1	-	-	14.12
5	0.64	0.6	6.1	-35.0	47	9.91
10	0.82	0.5	6.1	-	-	9.78
20	1.12	3.3	10.9	-21.1	47	8.81
30	1.15	5.7	12.1	-	-	8.58
50	1.53	14.1	22.2	-13.1	32	6.55
100	1.63	17.0	24.0	-	-	5.44
180	1.17	15.9	16.9	- 2.9	2	5.23
STATION 7						
2	0.45	0.3	6.6	-	-	14.00
5	0.85	0.6	6.0	-35.6	57	9.96
10	0.88	0.5	6.2	-	-	9.66
20	1.20	3.2	10.8	-22.6	48	8.74
30	1.24	4.5	12.0	-	-	8.62
50	1.52	12.4	21.4	-16.3	34	6.99
100	1.61	16.9	22.4	-	-	5.53
200	1.31	16.5	16.4	-2.8	-2	5.16
300	-	17.8	18.3	-	-	4.47
365	1.35	18.0	19.3	-3.1	8	4.23
STATION 8						
5	0.86	0.4	6.1	-	-	10.02
10	0.93	0.4	6.4	-33.9	58	9.77
20	1.10	3.1	10.8	-	-	8.85
30	-	-	-	-	-	8.71
40	1.48	7.3	16.0	-	-	7.99
50	1.57	12.6	21.5	-17.0	32	6.97
100	-	-	-	-	-	5.54
200	1.29	16.7	16.4	-4.2	12	5.28
300	1.23	17.9	18.3	-	-	4.54
470	1.19	17.8	20.1	-1.7	7	4.28

Depth (m)	phosphate	nitrate	silicate	deuterium	tritium	oxygen
		(µg-atm/ℓ)		δD°/₀₀	TU	ml/ℓ
STATION 9						
5	0.84	0.4	6.1	-	-	9.91
10	0.87	0.5	6.0	-	-	9.80
20	1.15	3.6	11.4	-	-	8.89
30	1.21	4.4	13.2	-	-	8.46
50	1.71	13.0	22.9	-	-	6.85
100	1.60	17.0	23.0	-	-	5.51
200	1.27	15.4	16.8	-	-	5.47
300	-	17.7	18.7	-	-	4.49
400	-	-	-	-	-	4.29
500	1.34	15.9	18.5	-	-	4.17
STATION 10						
2	-	-	-	-	-	12.85
5	-	-	-	-	-	9.81
10	-	-	-	-	-	9.68
20	-	-	-	-	-	8.86
30	-	-	-	-	-	8.55
40	-	-	-	-	-	7.78
50	-	-	-	-	-	6.81
100	-	-	-	-	-	5.50
200	-	-	-	-	-	5.28
300	-	-	-	-	-	4.67
400	-	-	-	-	-	4.28

* Phosphate, nitrate and silicate concentrations in µg-atm/ℓ

Deuterium in °/₀₀ $D = \left[\frac{[D]/[H]}{[D]/[H]_{SMOW}} - 1 \right] \times 1000$

where the subscript SMOW denotes standard mean ocean water.

Tritium in tritium units where

$$1\ TU = \frac{1 \text{ atom } {}^{3}H}{10^{18} \text{ atoms } {}^{1}H}$$

Oxygen in milliliters/liter.

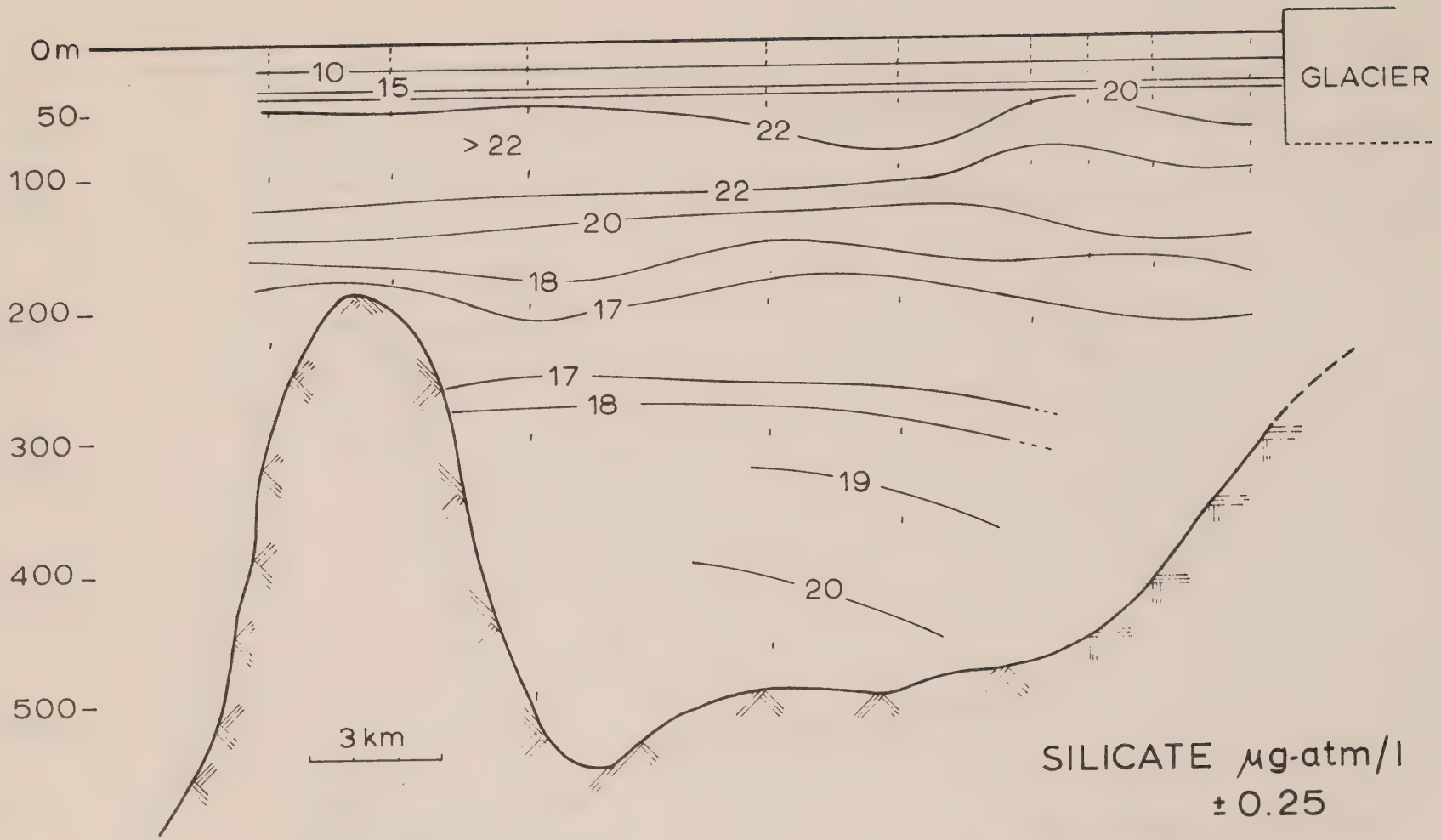

0m
50-
100-
200-
300-
400-
500-
10
15
20
> 22
22
22
20
18
17
17
18
19
20
GLACIER
3 km
SILICATE µg-atm/l
± 0.25

FIGURE 2

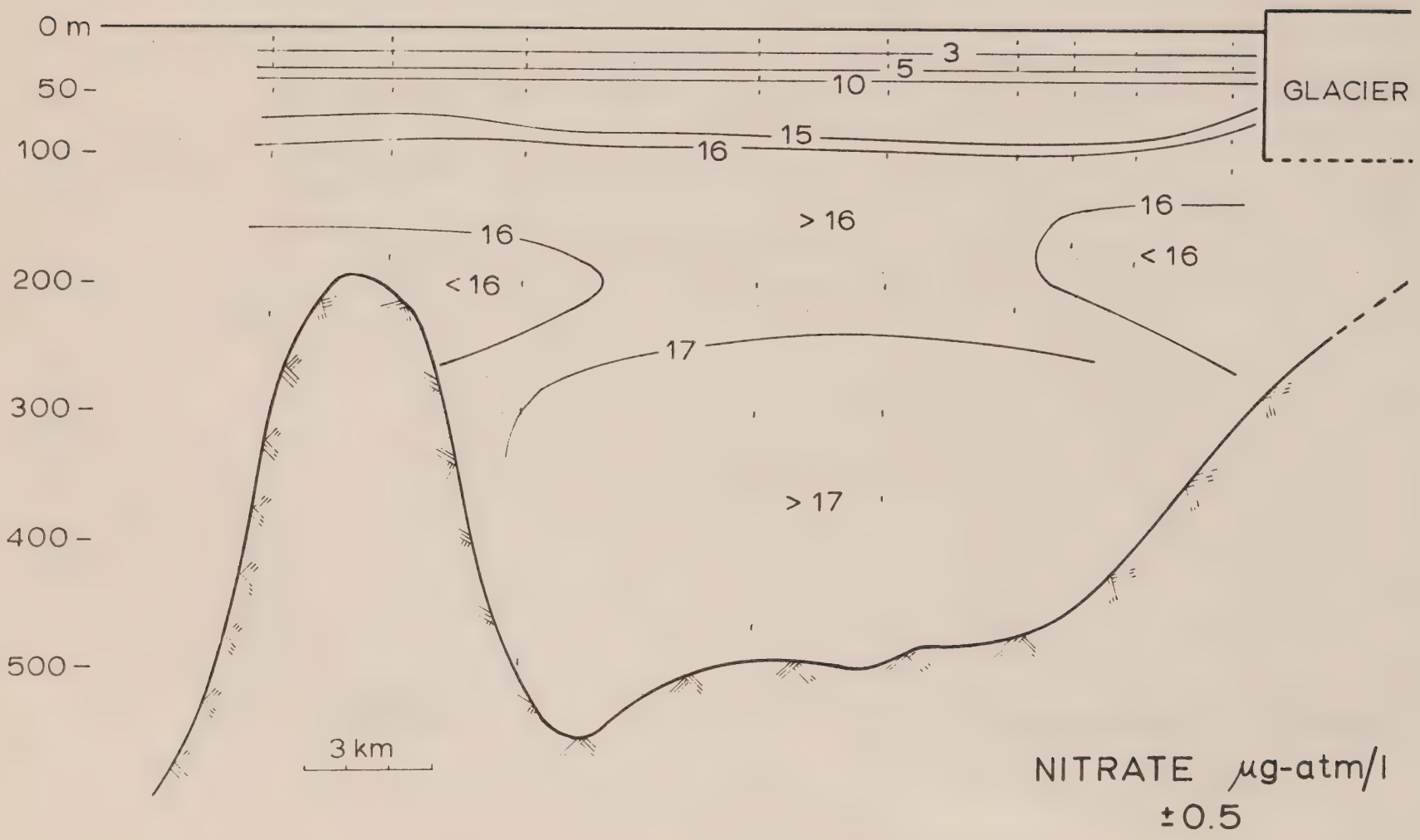

0 m
50 -
100 -
200 -
300 -
400 -
500 -
3
5
10
15
16
GLACIER
16
< 16
> 16
16
< 16
17
> 17
3 km
NITRATE µg-atm/l
±0.5

FIGURE 3

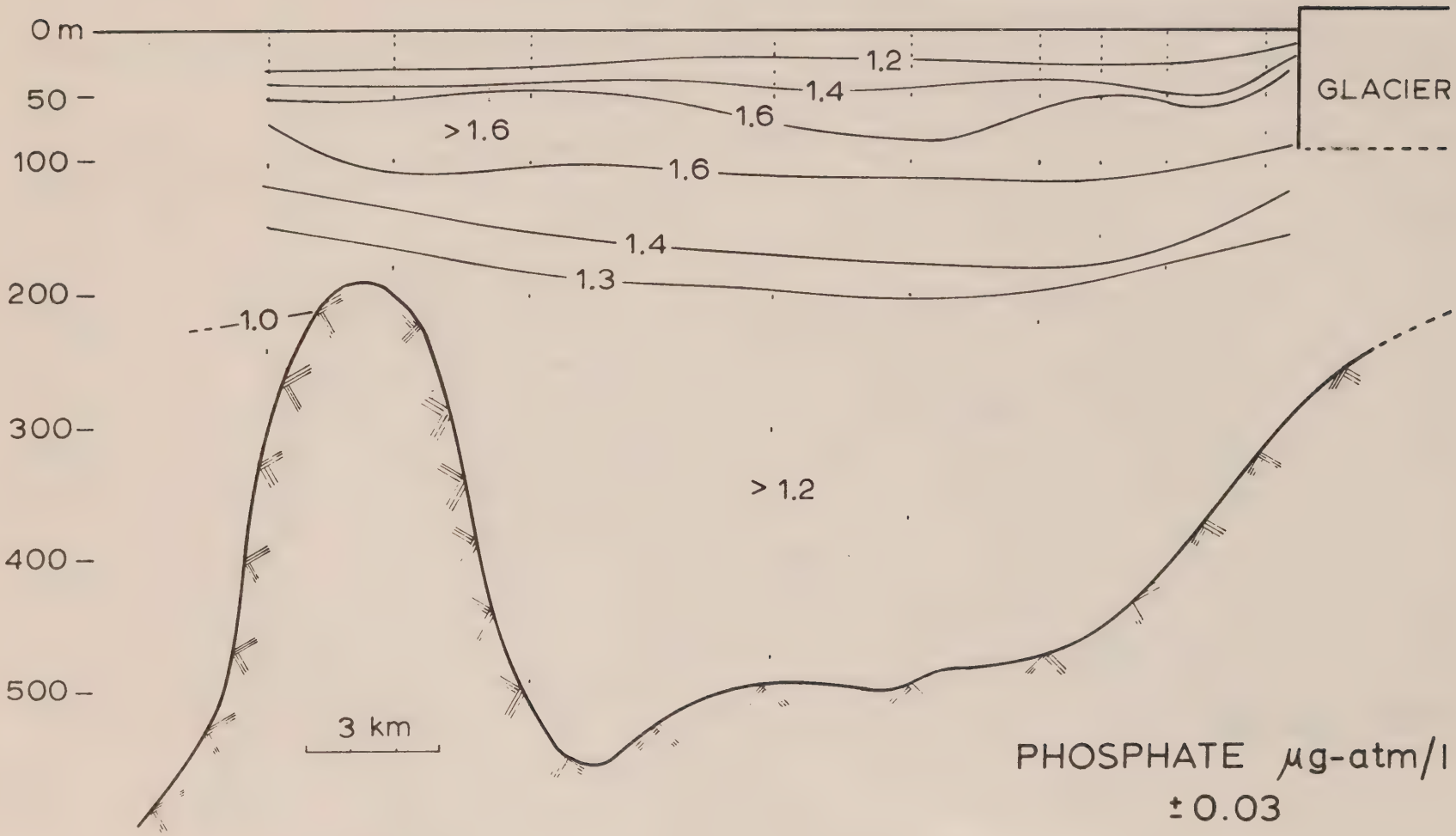

0 m
50 –
100 –
200 –
300 –
400 –
500 –
1.2
1.4
1.6
>1.6
1.6
1.4
1.3
1.0
> 1.2
GLACIER
3 km
PHOSPHATE µg-atm/l
± 0.03

FIGURE 4

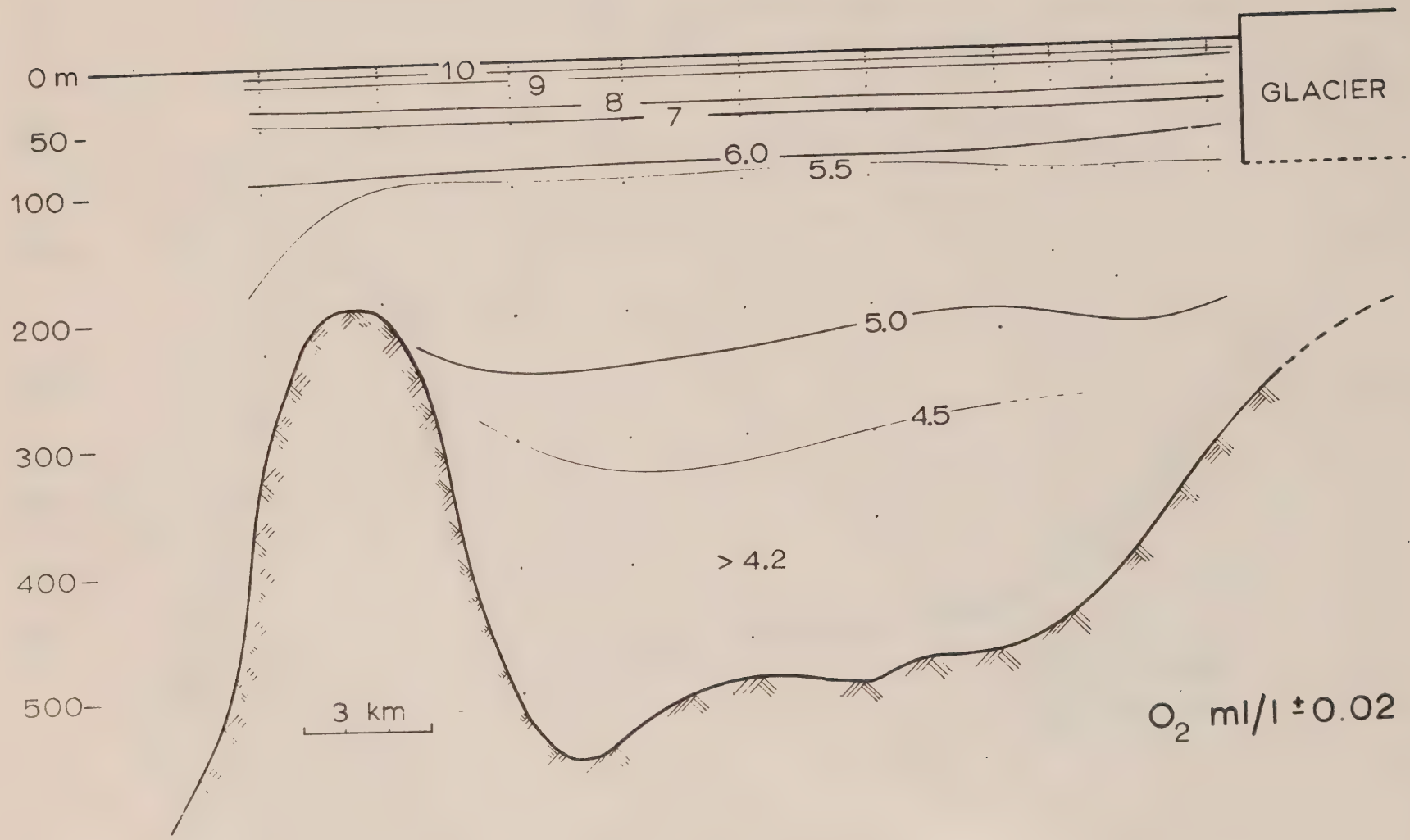

0 m
50
100
200
300
400
500
10
9
8
7
6.0
5.5
GLACIER
5.0
4.5
> 4.2
3 km
O_2 ml/l ± 0.02

FIGURE 5

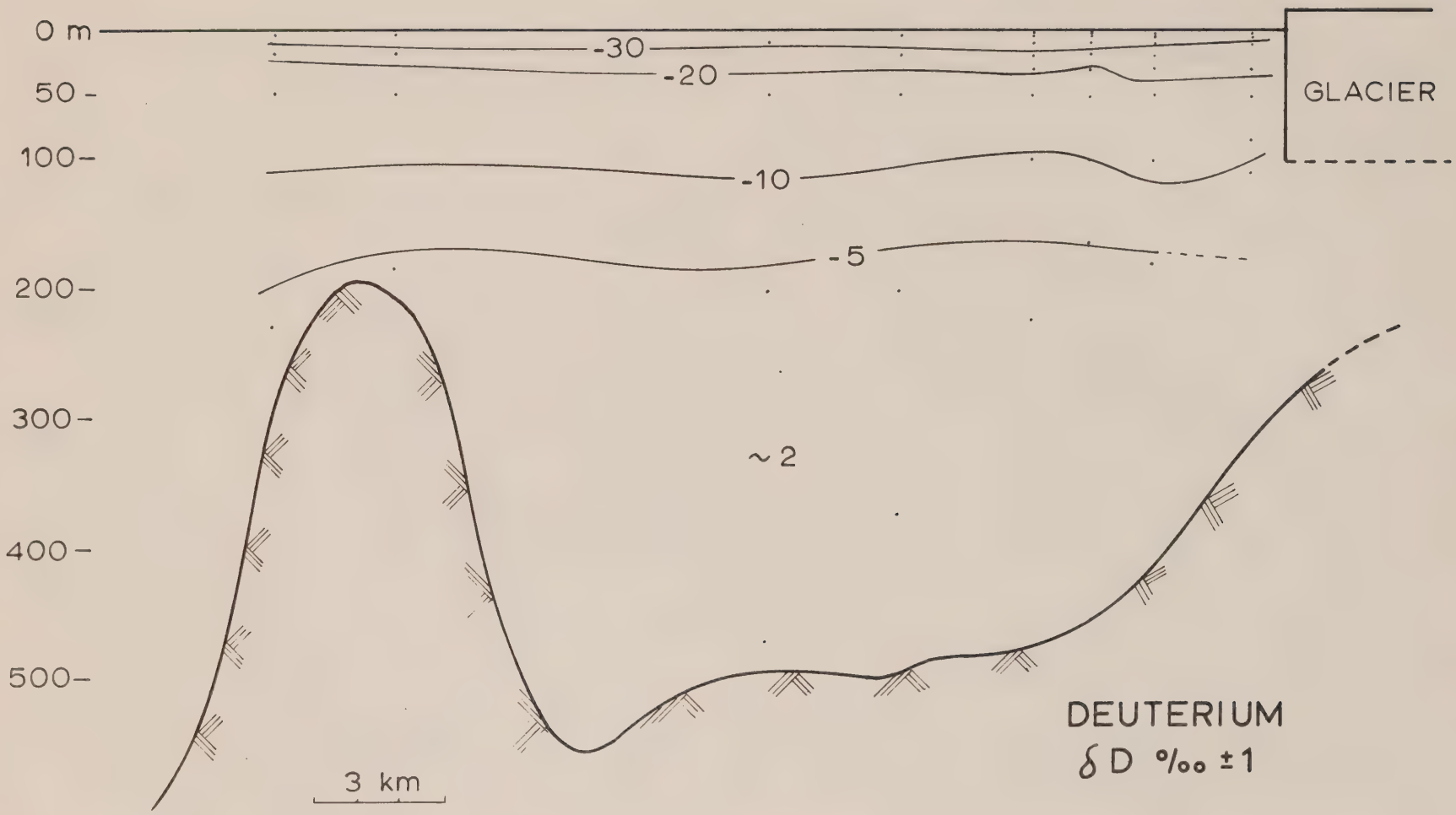


FIGURE 6

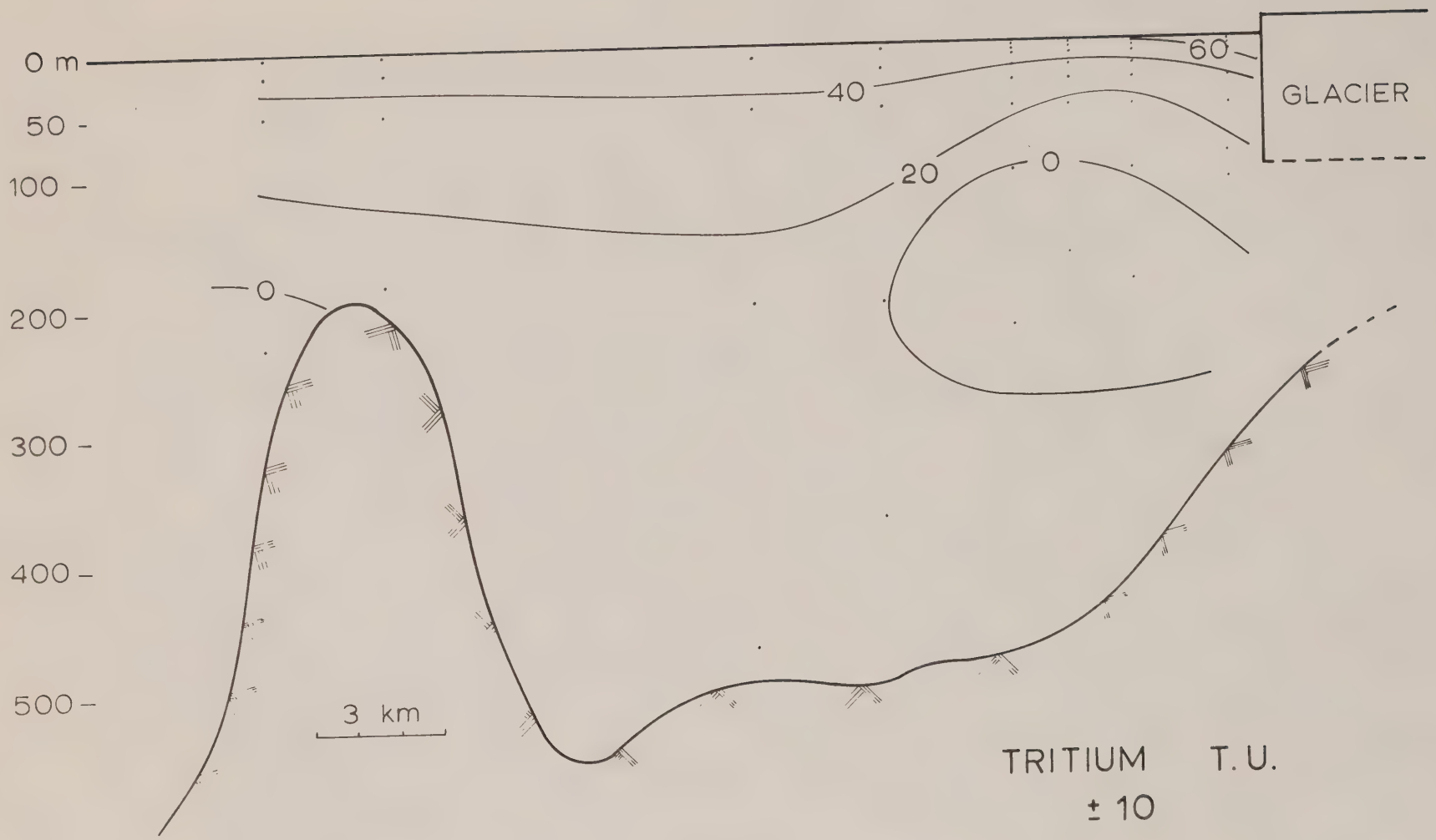
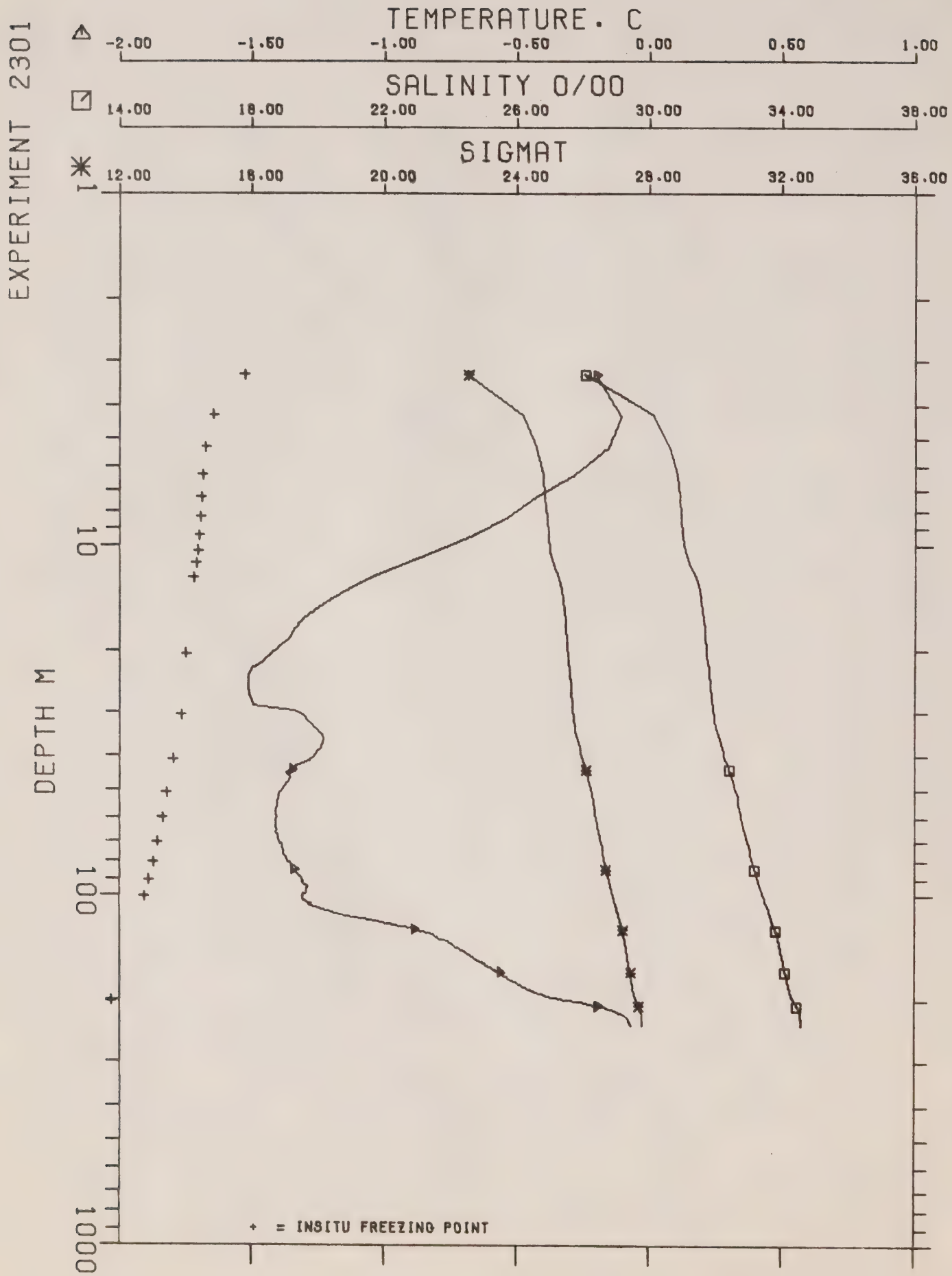


FIGURE 7

CTD DATA


EXPERIMENT 2301
TEMPERATURE. C
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00
SALINITY O/OO
14.00
18.00
22.00
26.00
30.00
34.00
38.00
SIGMAT
12.00
16.00
20.00
24.00
28.00
32.00
36.00
DEPTH M
10
100
1000
+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STNA EXPERIMENT 2301

LAT.N. 80-36-10 LONG.W. 79-31-10 DATE 030477 G.M.T. 2100

ICE THICKNESS 1.20 M DEPTH INCR 1.00 WATER DEPTH 231 M

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
3.0	3.30	-.200	23.630	28.044	22.539	1438.8
4.0	4.30	-.106	25.288	30.118	24.206	1442.1
5.0	5.30	-.155	25.631	30.615	24.608	1442.6
6.0	6.35	-.284	25.692	30.825	24.782	1442.3
7.0	7.35	-.428	25.651	30.916	24.860	1441.8
8.0	8.40	-.533	25.608	30.964	24.902	1441.3
9.0	9.45	-.663	25.549	31.018	24.950	1440.8
10.0	10.45	-.807	25.489	31.084	25.008	1440.3
11.0	11.35	-.915	25.497	31.206	25.109	1439.9
12.0	12.45	-1.052	25.528	31.389	25.260	1439.6
13.0	13.45	-1.134	25.559	31.516	25.365	1439.4
14.0	14.45	-1.203	25.539	31.560	25.402	1439.1
15.0	15.50	-1.267	25.529	31.614	25.447	1438.9
16.0	16.45	-1.310	25.514	31.638	25.468	1438.8
17.0	17.50	-1.342	25.509	31.663	25.489	1438.7
18.0	18.50	-1.360	25.506	31.679	25.502	1438.6
19.0	19.60	-1.399	25.503	31.714	25.532	1438.5
20.0	20.50	-1.428	25.492	31.729	25.545	1438.4
21.0	21.60	-1.461	25.485	31.754	25.565	1438.3
22.0	22.55	-1.500	25.477	31.784	25.590	1438.2
23.0	23.65	-1.517	25.489	31.817	25.618	1438.2
24.0	24.60	-1.516	25.503	31.835	25.632	1438.2
25.0	25.70	-1.514	25.514	31.848	25.643	1438.3
26.0	26.60	-1.508	25.529	31.861	25.653	1438.3
27.0	27.70	-1.502	25.548	31.881	25.669	1438.4
28.0	28.65	-1.496	25.571	31.905	25.688	1438.5
29.0	29.70	-1.333	25.703	31.912	25.691	1439.3
30.0	30.65	-1.307	25.745	31.941	25.713	1439.4
31.0	31.75	-1.288	25.776	31.963	25.731	1439.6
32.0	32.70	-1.271	25.809	31.989	25.751	1439.7
33.0	33.75	-1.248	25.853	32.024	25.779	1439.9
34.0	34.75	-1.236	25.889	32.061	25.808	1440.0
35.0	35.80	-1.231	25.924	32.102	25.842	1440.1
36.0	36.75	-1.233	25.955	32.146	25.877	1440.2
37.0	37.85	-1.241	25.977	32.183	25.908	1440.2
38.0	38.80	-1.253	25.996	32.222	25.940	1440.2
39.0	39.85	-1.266	26.011	32.256	25.967	1440.2
40.0	40.85	-1.280	26.029	32.295	25.999	1440.2
41.0	41.90	-1.311	26.042	32.345	26.041	1440.2
42.0	42.90	-1.333	26.055	32.386	26.074	1440.1
43.0	43.90	-1.345	26.067	32.414	26.097	1440.1
44.0	44.85	-1.370	26.075	32.453	26.129	1440.1
45.0	45.95	-1.354	26.103	32.473	26.145	1440.2
46.0	46.95	-1.362	26.125	32.511	26.176	1440.3
47.0	47.95	-1.370	26.144	32.544	26.203	1440.3
48.0	48.95	-1.379	26.162	32.579	26.231	1440.3
49.0	49.95	-1.387	26.178	32.609	26.256	1440.3
50.0	51.00	-1.393	26.191	32.632	26.275	1440.3
51.0	51.95	-1.399	26.207	32.661	26.298	1440.4
52.0	53.10	-1.399	26.211	32.666	26.302	1440.4
53.0	54.00	-1.405	26.219	32.683	26.316	1440.4
54.0	55.10	-1.406	26.231	32.699	26.329	1440.4
55.0	56.10	-1.406	26.243	32.716	26.343	1440.5
56.0	57.10	-1.410	26.255	32.735	26.359	1440.5
57.0	58.10	-1.408	26.264	32.745	26.367	1440.5
58.0	59.10	-1.408	26.271	32.754	26.374	1440.6
59.0	60.15	-1.407	26.288	32.775	26.391	1440.6
60.0	61.10	-1.410	26.304	32.800	26.411	1440.7
61.0	62.20	-1.410	26.315	32.814	26.423	1440.7
62.0	63.15	-1.410	26.330	32.834	26.439	1440.7
63.0	64.25	-1.411	26.347	32.858	26.458	1440.8
64.0	65.20	-1.407	26.367	32.882	26.477	1440.9

EXPERIMENT 2301

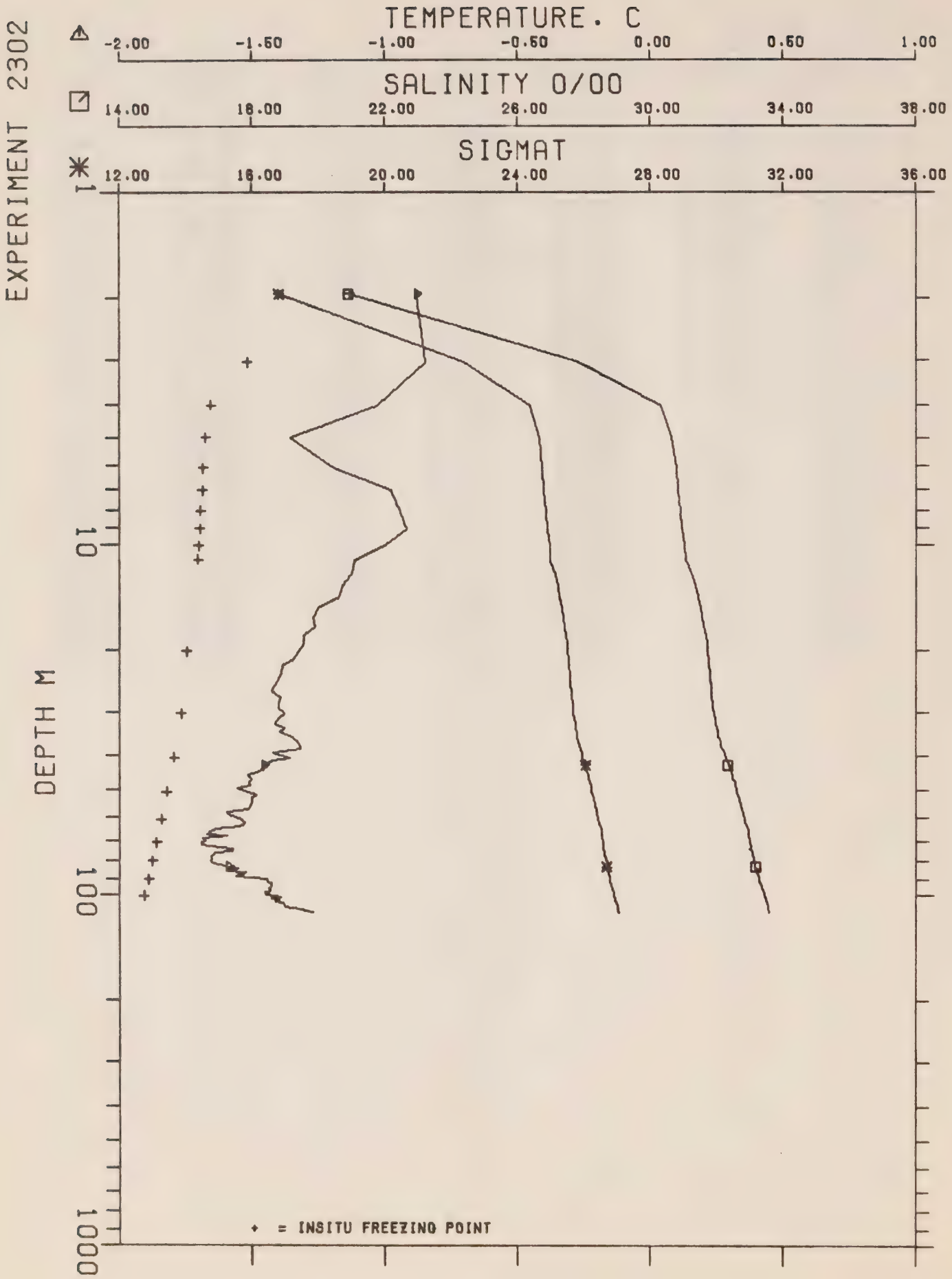
DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
65.Ø	66.25	-1.4Ø8	26.377	32.895	26.488	144Ø.9
66.Ø	67.2Ø	-1.4Ø2	26.396	32.914	26.5Ø3	1441.Ø
67.Ø	68.25	-1.4Ø1	26.411	32.934	26.519	1441.Ø
68.Ø	69.3Ø	-1.399	26.426	32.952	26.534	1441.1
69.Ø	7Ø.3Ø	-1.396	26.449	32.979	26.556	1441.1
7Ø.Ø	71.3Ø	-1.387	26.468	32.994	26.568	1441.2
71.Ø	72.35	-1.383	26.484	33.Ø11	26.581	1441.3
72.Ø	73.35	-1.386	26.493	33.Ø26	26.594	1441.3
73.Ø	74.35	-1.379	26.511	33.Ø43	26.6Ø7	1441.4
74.Ø	75.4Ø	-1.382	26.513	33.Ø49	26.612	1441.4
75.Ø	76.35	-1.379	26.521	33.Ø56	26.618	1441.4
76.Ø	77.4Ø	-1.372	26.54Ø	33.Ø73	26.631	1441.5
77.Ø	78.4Ø	-1.369	26.556	33.Ø91	26.646	1441.6
78.Ø	79.45	-1.365	26.57Ø	33.1Ø5	26.657	1441.6
79.Ø	8Ø.4Ø	-1.355	26.588	33.118	26.668	1441.7
8Ø.Ø	81.5Ø	-1.351	26.6Ø2	33.134	26.68Ø	1441.7
81.Ø	82.45	-1.349	26.618	33.152	26.695	1441.8
82.Ø	83.55	-1.344	26.632	33.165	26.7Ø5	1441.9
83.Ø	84.45	-1.339	26.649	33.182	26.719	1441.9
84.Ø	85.55	-1.334	26.664	33.196	26.73Ø	1442.Ø
85.Ø	86.55	-1.324	26.682	33.21Ø	26.741	1442.1
86.Ø	87.55	-1.32Ø	26.7ØØ	33.23Ø	26.757	1442.1
87.Ø	88.55	-1.316	26.717	33.248	26.772	1442.2
88.Ø	89.6Ø	-1.311	26.731	33.261	26.782	1442.2
89.Ø	9Ø.6Ø	-1.3Ø5	26.749	33.278	26.796	1442.3
9Ø.Ø	91.55	-1.31Ø	26.759	33.297	26.811	1442.3
91.Ø	92.65	-1.3Ø6	26.774	33.313	26.824	1442.4
92.Ø	93.6Ø	-1.292	26.8Ø1	33.333	26.84Ø	1442.5
93.Ø	94.7Ø	-1.29Ø	26.817	33.353	26.855	1442.6
94.Ø	95.65	-1.294	26.826	33.368	26.868	1442.6
95.Ø	96.75	-1.296	26.834	33.382	26.879	1442.6
96.Ø	97.7Ø	-1.293	26.849	33.398	26.892	1442.7
97.Ø	98.75	-1.3Ø3	26.855	33.418	26.9Ø8	1442.7
98.Ø	99.7Ø	-1.3Ø9	26.86Ø	33.43Ø	26.919	1442.7
99.Ø	1ØØ.8Ø	-1.31Ø	26.872	33.447	26.932	1442.7
1ØØ.Ø	1Ø1.85	-1.31Ø	26.895	33.478	26.957	1442.8
1Ø1.Ø	1Ø2.75	-1.31Ø	26.9ØØ	33.484	26.962	1442.8
1Ø2.Ø	1Ø3.85	-1.296	26.922	33.499	26.974	1442.9
1Ø3.Ø	1Ø4.8Ø	-1.276	26.951	33.515	26.987	1443.Ø
1Ø4.Ø	1Ø5.85	-1.286	26.961	33.54Ø	27.ØØ7	1443.Ø
1Ø5.Ø	1Ø6.85	-1.276	26.98Ø	33.553	27.Ø18	1443.1
1Ø6.Ø	1Ø7.85	-1.268	27.ØØ5	33.567	27.Ø28	1443.2
1Ø7.Ø	1Ø8.95	-1.245	27.Ø27	33.582	27.Ø4Ø	1443.3
1Ø8.Ø	1Ø9.95	-1.231	27.Ø45	33.591	27.Ø46	1443.4
1Ø9.Ø	11Ø.9Ø	-1.212	27.Ø68	33.6ØØ	27.Ø54	1443.5
11Ø.Ø	112.ØØ	-1.195	27.Ø92	33.614	27.Ø64	1443.7
111.Ø	112.9Ø	-1.183	27.111	33.626	27.Ø74	1443.7
112.Ø	114.ØØ	-1.142	27.158	33.644	27.Ø87	1444.Ø
113.Ø	115.ØØ	-1.1Ø8	27.2Ø1	33.664	27.1Ø2	1444.2
114.Ø	116.Ø5	-1.Ø83	27.234	33.68Ø	27.114	1444.3
115.Ø	117.Ø5	-1.Ø52	27.272	33.697	27.127	1444.5
116.Ø	118.ØØ	-1.Ø28	27.3Ø3	33.712	27.138	1444.7
117.Ø	119.1Ø	-1.ØØ4	27.333	33.725	27.148	1444.8
118.Ø	12Ø.1Ø	-.99Ø	27.353	33.737	27.157	1444.9
119.Ø	121.1Ø	-.957	27.391	33.75Ø	27.167	1445.1
12Ø.Ø	122.15	-.935	27.421	33.766	27.178	1445.3
121.Ø	123.1Ø	-.92Ø	27.446	33.782	27.191	1445.4
122.Ø	124.2Ø	-.9ØØ	27.468	33.79Ø	27.197	1445.5
123.Ø	125.2Ø	-.887	27.488	33.8Ø1	27.2Ø6	1445.6
124.Ø	126.1Ø	-.869	27.511	33.812	27.213	1445.7
125.Ø	127.2Ø	-.85Ø	27.539	33.828	27.226	1445.8
126.Ø	128.15	-.829	27.568	33.843	27.237	1446.Ø
127.Ø	129.25	-.817	27.586	33.854	27.245	1446.Ø
128.Ø	13Ø.25	-.8Ø9	27.6ØØ	33.863	27.252	1446.1
129.Ø	131.2Ø	-.8ØØ	27.613	33.871	27.259	1446.2
13Ø.Ø	132.3Ø	-.793	27.624	33.877	27.264	1446.2
131.Ø	133.3Ø	-.784	27.639	33.887	27.271	1446.3

EXPERIMENT 2301

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
132.Ø	134.3Ø	-.773	27.654	33.894	27.277	1446.4
133.Ø	135.25	-.762	27.67Ø	33.9Ø3	27.283	1446.5
134.Ø	136.35	-.755	27.683	33.912	27.29Ø	1446.5
135.Ø	137.35	-.747	27.696	33.92Ø	27.296	1446.6
136.Ø	138.35	-.74Ø	27.7Ø7	33.927	27.3Ø2	1446.7
137.Ø	139.4Ø	-.734	27.719	33.936	27.3Ø9	1446.7
138.Ø	14Ø.4Ø	-.727	27.73Ø	33.942	27.313	1446.8
139.Ø	141.4Ø	-.718	27.742	33.947	27.317	1446.8
14Ø.Ø	142.4Ø	-.713	27.754	33.957	27.325	1446.9
141.Ø	143.45	-.7Ø4	27.767	33.963	27.33Ø	1447.Ø
142.Ø	144.45	-.697	27.779	33.971	27.336	1447.Ø
143.Ø	145.55	-.69Ø	27.79Ø	33.979	27.342	1447.1
144.Ø	146.5Ø	-.685	27.799	33.985	27.346	1447.1
145.Ø	147.6Ø	-.681	27.8Ø8	33.991	27.351	1447.2
146.Ø	148.55	-.673	27.82Ø	33.997	27.356	1447.2
147.Ø	149.65	-.665	27.831	34.ØØ4	27.361	1447.3
148.Ø	15Ø.6Ø	-.66Ø	27.844	34.Ø14	27.369	1447.3
149.Ø	151.65	-.655	27.855	34.Ø23	27.376	1447.4
15Ø.Ø	152.6Ø	-.649	27.862	34.Ø26	27.378	1447.4
151.Ø	153.65	-.643	27.872	34.Ø32	27.383	1447.5
152.Ø	154.7Ø	-.632	27.889	34.Ø41	27.39Ø	1447.6
153.Ø	155.65	-.626	27.9Ø1	34.Ø5Ø	27.396	1447.6
154.Ø	156.75	-.622	27.9Ø6	34.Ø52	27.398	1447.7
155.Ø	157.65	-.62Ø	27.91Ø	34.Ø54	27.4ØØ	1447.7
156.Ø	158.75	-.612	27.923	34.Ø62	27.4Ø6	1447.8
157.Ø	159.7Ø	-.6Ø3	27.936	34.Ø69	27.411	1447.8
158.Ø	16Ø.75	-.596	27.949	34.Ø78	27.418	1447.9
159.Ø	161.75	-.591	27.957	34.Ø83	27.422	1447.9
16Ø.Ø	162.75	-.582	27.971	34.Ø91	27.428	1448.Ø
161.Ø	163.85	-.578	27.98Ø	34.Ø98	27.433	1448.1
162.Ø	164.8Ø	-.569	27.992	34.1Ø4	27.438	1448.1
163.Ø	165.9Ø	-.562	28.ØØ5	34.112	27.444	1448.2
164.Ø	166.85	-.56Ø	28.Ø12	34.119	27.45Ø	1448.2
165.Ø	167.8Ø	-.556	28.Ø18	34.122	27.452	1448.3
166.Ø	168.9Ø	-.549	28.Ø29	34.129	27.457	1448.3
167.Ø	169.85	-.543	28.Ø41	34.137	27.464	1448.4
168.Ø	17Ø.95	-.537	28.Ø49	34.14Ø	27.466	1448.4
169.Ø	171.9Ø	-.534	28.Ø56	34.146	27.47Ø	1448.5
17Ø.Ø	172.9Ø	-.528	28.Ø65	34.151	27.474	1448.5
171.Ø	173.95	-.523	28.Ø72	34.155	27.477	1448.6
172.Ø	174.95	-.514	28.Ø87	34.163	27.484	1448.6
173.Ø	176.Ø5	-.5Ø8	28.Ø98	34.171	27.489	1448.7
174.Ø	176.95	-.5Ø2	28.1Ø7	34.177	27.494	1448.7
175.Ø	178.ØØ	-.495	28.12Ø	34.185	27.5ØØ	1448.8
176.Ø	179.Ø5	-.487	28.13Ø	34.189	27.5Ø3	1448.9
177.Ø	18Ø.Ø5	-.483	28.141	34.198	27.51Ø	1448.9
178.Ø	181.Ø5	-.478	28.148	34.2Ø2	27.513	1448.9
179.Ø	182.15	-.473	28.159	34.21Ø	27.519	1449.Ø
18Ø.Ø	183.Ø5	-.466	28.168	34.214	27.522	1449.1
181.Ø	184.15	-.458	28.181	34.221	27.528	1449.1
182.Ø	185.15	-.452	28.19Ø	34.227	27.532	1449.2
183.Ø	186.15	-.444	28.2Ø3	34.235	27.538	1449.2
184.Ø	187.2Ø	-.435	28.218	34.244	27.545	1449.3
185.Ø	188.2Ø	-.43Ø	28.228	34.251	27.551	1449.4
186.Ø	189.2Ø	-.423	28.238	34.256	27.555	1449.4
187.Ø	19Ø.25	-.412	28.254	34.265	27.561	1449.5
188.Ø	191.25	-.399	28.276	34.279	27.572	1449.6
189.Ø	192.35	-.392	28.288	34.287	27.578	1449.7
19Ø.Ø	193.3Ø	-.383	28.3Ø4	34.297	27.586	1449.7
191.Ø	194.3Ø	-.373	28.319	34.3Ø5	27.592	1449.8
192.Ø	195.4Ø	-.365	28.334	34.315	27.6ØØ	1449.9
193.Ø	196.35	-.351	28.355	34.328	27.6Ø9	145Ø.Ø
194.Ø	197.3Ø	-.332	28.386	34.347	27.624	145Ø.1
195.Ø	198.4Ø	-.314	28.416	34.366	27.638	145Ø.2
196.Ø	199.35	-.298	28.44Ø	34.379	27.649	145Ø.3
197.Ø	2ØØ.4Ø	-.274	28.472	34.395	27.66Ø	145Ø.5
198.Ø	2Ø1.4Ø	-.253	28.51Ø	34.422	27.68Ø	145Ø.6

EXPERIMENT 2301

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
199.Ø	2Ø2.5Ø	-.237	28.537	34.439	27.694	145Ø.7
2ØØ.Ø	2Ø3.3Ø	-.227	28.547	34.44Ø	27.694	145Ø.8
2Ø1.Ø	2Ø4.3Ø	-.213	28.551	34.429	27.685	145Ø.9
2Ø2.Ø	2Ø5.45	-.2Ø5	28.578	34.455	27.7Ø5	1451.Ø
2Ø3.Ø	2Ø6.4Ø	-.194	28.595	34.465	27.713	1451.Ø
2Ø4.Ø	2Ø7.35	-.18Ø	28.619	34.481	27.725	1451.1
2Ø5.Ø	2Ø8.5Ø	-.166	28.637	34.489	27.73Ø	1451.2
2Ø6.Ø	2Ø9.6Ø	-.153	28.665	34.511	27.748	1451.3
2Ø7.Ø	21Ø.55	-.146	28.679	34.52Ø	27.755	1451.4
2Ø8.Ø	211.6Ø	-.137	28.691	34.525	27.759	1451.5
2Ø9.Ø	212.6Ø	-.13Ø	28.7Ø3	34.533	27.764	1451.5
21Ø.Ø	213.6Ø	-.124	28.712	34.538	27.768	1451.6
211.Ø	214.65	-.117	28.725	34.546	27.775	1451.6
212.Ø	215.65	-.113	28.731	34.549	27.777	1451.7
213.Ø	216.7Ø	-.1Ø7	28.74Ø	34.554	27.781	1451.7
214.Ø	217.7Ø	-.1Ø1	28.748	34.558	27.783	1451.8
215.Ø	218.75	-.Ø95	28.758	34.563	27.787	1451.8
216.Ø	219.7Ø	-.Ø91	28.765	34.568	27.791	1451.9
217.Ø	22Ø.8Ø	-.Ø86	28.773	34.572	27.794	1451.9
218.Ø	221.8Ø	-.Ø81	28.781	34.576	27.797	1452.Ø
219.Ø	222.8Ø	-.Ø78	28.785	34.578	27.798	1452.Ø
22Ø.Ø	223.8Ø	-.Ø77	28.788	34.58Ø	27.8ØØ	1452.Ø
221.Ø	224.85	-.Ø77	28.79Ø	34.582	27.8Ø2	1452.Ø
222.Ø	225.85	-.Ø76	28.792	34.583	27.8Ø2	1452.1
223.Ø	226.8Ø	-.Ø73	28.796	34.584	27.8Ø3	1452.1
224.Ø	227.9Ø	-.Ø73	28.796	34.584	27.8Ø3	1452.1
225.Ø	228.85	-.Ø71	28.799	34.585	27.8Ø3	1452.1
226.Ø	229.95	-.Ø69	28.8Ø3	34.587	27.8Ø5	1452.2
227.Ø	23Ø.9Ø	-.Ø69	28.8Ø4	34.588	27.8Ø6	1452.2
228.Ø	231.95	-.Ø68	28.8Ø6	34.589	27.8Ø6	1452.2
229.Ø	233.ØØ	-.Ø65	28.8Ø9	34.589	27.8Ø7	1452.2
23Ø.Ø	233.9Ø	-.Ø65	28.811	34.59Ø	27.8Ø8	1452.3
231.Ø	235.ØØ	-.Ø64	28.812	34.59Ø	27.8Ø7	1452.3


EXPERIMENT 2302
TEMPERATURE. C
-2.00
-1.50
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38.00
SIGMAT
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16.00
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DEPTH M
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+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN1 EXPERIMENT 2302

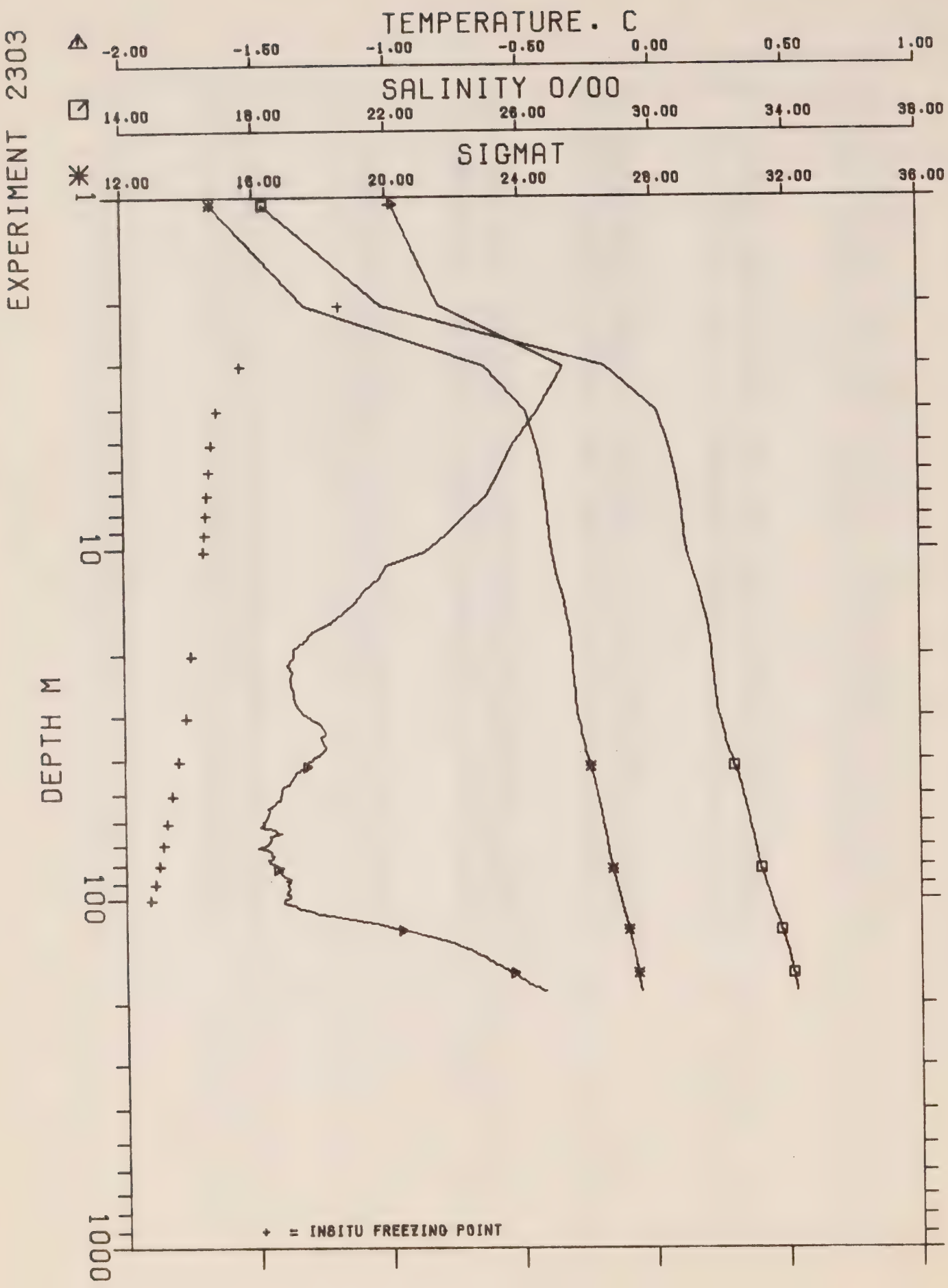
LAT.N. 80-34-50 LONG.W. 78-12-30 DATE 031677 G.M.T. 2230

ICE THICKNESS .60 M DEPTH INCR 1.00 WATER DEPTH 118 M

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
1.0	.90	-.994	15.899	18.680	15.008	1422.2
2.0	1.95	-.878	17.702	20.917	16.810	1425.8
3.0	3.05	-.844	23.036	27.856	22.403	1435.5
4.0	4.05	-1.028	24.743	30.311	24.389	1438.0
5.0	5.00	-1.353	24.753	30.652	24.671	1437.0
6.0	6.10	-1.188	24.972	30.780	24.771	1438.0
7.0	7.05	-.973	25.172	30.830	24.807	1439.1
8.0	8.05	-.940	25.279	30.940	24.895	1439.4
9.0	9.05	-.917	25.320	30.971	24.919	1439.6
10.0	10.15	-.999	25.318	31.052	24.987	1439.3
11.0	11.10	-1.117	25.252	31.083	25.015	1438.8
12.0	12.10	-1.123	25.369	31.248	25.148	1439.0
13.0	13.15	-1.161	25.414	31.347	25.230	1439.0
14.0	14.15	-1.177	25.461	31.428	25.295	1439.1
15.0	15.20	-1.249	25.475	31.521	25.372	1438.9
16.0	16.15	-1.269	25.500	31.576	25.417	1438.9
17.0	17.20	-1.262	25.536	31.617	25.450	1439.0
18.0	18.20	-1.304	25.537	31.662	25.487	1438.9
19.0	19.15	-1.305	25.569	31.706	25.523	1438.9
20.0	20.25	-1.323	25.569	31.724	25.538	1438.9
21.0	21.25	-1.347	25.569	31.748	25.558	1438.8
22.0	22.20	-1.387	25.553	31.769	25.576	1438.7
23.0	23.25	-1.389	25.569	31.793	25.595	1438.7
24.0	24.20	-1.398	25.572	31.806	25.606	1438.7
25.0	25.25	-1.417	25.570	31.822	25.620	1438.7
26.0	26.25	-1.426	25.583	31.850	25.642	1438.7
27.0	27.25	-1.388	25.620	31.859	25.649	1438.9
28.0	28.35	-1.399	25.623	31.874	25.661	1438.9
29.0	29.25	-1.399	25.637	31.892	25.676	1438.9
30.0	30.30	-1.373	25.670	31.909	25.689	1439.1
31.0	31.35	-1.401	25.673	31.943	25.717	1439.0
32.0	32.35	-1.415	25.689	31.979	25.747	1439.0
33.0	33.35	-1.376	25.729	31.992	25.756	1439.2
34.0	34.30	-1.395	25.740	32.026	25.784	1439.2
35.0	35.40	-1.344	25.801	32.054	25.806	1439.5
36.0	36.40	-1.329	25.851	32.107	25.848	1439.7
37.0	37.45	-1.317	25.876	32.127	25.864	1439.8
38.0	38.40	-1.316	25.914	32.177	25.905	1439.9
39.0	39.40	-1.419	25.890	32.254	25.969	1439.5
40.0	40.45	-1.356	25.950	32.268	25.979	1439.8
41.0	41.45	-1.425	25.934	32.320	26.023	1439.6
42.0	42.50	-1.451	25.935	32.349	26.047	1439.5
43.0	43.45	-1.456	25.963	32.392	26.082	1439.6
44.0	44.55	-1.483	25.981	32.446	26.126	1439.5
45.0	45.45	-1.516	25.977	32.475	26.150	1439.4
46.0	46.55	-1.498	25.998	32.484	26.157	1439.6
47.0	47.50	-1.508	26.035	32.545	26.207	1439.6
48.0	48.55	-1.506	26.062	32.580	26.235	1439.7
49.0	49.55	-1.553	26.035	32.592	26.246	1439.5
50.0	50.65	-1.508	26.078	32.602	26.253	1439.8
51.0	51.60	-1.481	26.115	32.624	26.270	1439.9
52.0	52.65	-1.502	26.128	32.664	26.304	1439.9
53.0	53.60	-1.502	26.150	32.693	26.327	1440.0
54.0	54.65	-1.501	26.172	32.722	26.351	1440.0
55.0	55.65	-1.505	26.179	32.736	26.362	1440.0
56.0	56.70	-1.517	26.189	32.762	26.383	1440.0
57.0	57.70	-1.595	26.147	32.789	26.407	1439.7
58.0	58.70	-1.583	26.162	32.795	26.412	1439.8
59.0	59.70	-1.559	26.203	32.826	26.436	1440.0
60.0	60.70	-1.535	26.237	32.845	26.451	1440.1
61.0	61.75	-1.527	26.252	32.857	26.460	1440.2
62.0	62.75	-1.529	26.274	32.838	26.486	1440.3

EXPERIMENT 2302

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
63.Ø	63.8Ø	-1.544	26.292	32.929	26.519	1440.3
64.Ø	64.75	-1.639	26.235	32.954	26.542	1439.9
65.Ø	65.75	-1.658	26.223	32.959	26.546	1439.8
66.Ø	66.85	-1.672	26.218	32.966	26.552	1439.8
67.Ø	67.8Ø	-1.591	26.291	32.977	26.559	1440.2
68.Ø	68.85	-1.684	26.231	32.996	26.576	1439.8
69.Ø	69.85	-1.675	26.243	33.ØØ2	26.581	1439.8
7Ø.Ø	7Ø.85	-1.692	26.241	33.Ø17	26.594	1439.8
71.Ø	71.9Ø	-1.688	26.249	33.Ø24	26.6ØØ	1439.8
72.Ø	72.9Ø	-1.613				
73.Ø	73.9Ø	-1.568	26.332	33.ØØ5	26.581	1440.4
74.Ø	74.95	-1.576	26.385	33.Ø86	26.647	1440.5
75.Ø	75.95	-1.642	26.338	33.Ø94	26.655	1440.2
76.Ø	76.95	-1.649	26.334	33.Ø95	26.656	1440.2
77.Ø	77.95	-1.656	26.337	33.1Ø7	26.666	1440.2
78.Ø	79.Ø5	-1.65Ø	26.355	33.124	26.679	1440.3
79.Ø	8Ø.ØØ	-1.653	26.383	33.166	26.713	1440.3
8Ø.Ø	81.Ø5	-1.645				
81.Ø	82.Ø5	-1.615	26.412	33.163	26.71Ø	1440.5
82.Ø	83.Ø5	-1.584	26.438	33.164	26.71Ø	1440.7
83.Ø	84.1Ø	-1.552	26.467	33.168	26.713	1440.9
84.Ø	85.1Ø	-1.589	26.472	33.216	26.752	1440.8
85.Ø	86.15	-1.52Ø	26.526	33.212	26.748	1441.1
86.Ø	87.15	-1.533	26.533	33.236	26.768	1441.1
87.Ø	88.1Ø	-1.558	26.532	33.261	26.789	1441.1
88.Ø	89.15	-1.491				
89.Ø	9Ø.15	-1.442	26.637	33.276	26.798	1441.7
9Ø.Ø	91.2Ø	-1.438	26.652	33.292	26.811	1441.7
91.Ø	92.15	-1.427	26.678	33.315	26.829	1441.8
92.Ø	93.25	-1.424	26.692	33.33Ø	26.841	1441.9
93.Ø	94.2Ø	-1.424	26.7Ø7	33.351	26.858	1441.9
94.Ø	95.25	-1.433	26.713	33.369	26.873	1441.9
95.Ø	96.25	-1.428	26.734	33.391	26.89Ø	1442.Ø
96.Ø	97.3Ø	-1.428	26.743	33.4Ø3	26.9ØØ	1442.Ø
97.Ø	98.3Ø	-1.449	26.741	33.423	26.917	1442.Ø
98.Ø	99.3Ø	-1.447	26.75Ø	33.432	26.925	1442.Ø
99.Ø	1ØØ.35	-1.4Ø6	26.782	33.43Ø	26.922	1442.2
1ØØ.Ø	1Ø1.3Ø	-1.391	26.817	33.461	26.946	1442.3
1Ø1.Ø	1Ø2.35	-1.423	26.798	33.47Ø	26.954	1442.2
1Ø2.Ø	1Ø3.35	-1.394	26.826	33.475	26.958	1442.4
1Ø3.Ø	1Ø4.4Ø	-1.4Ø8	26.849	33.522	26.996	1442.4
1Ø4.Ø	1Ø5.4Ø	-1.381	26.875	33.527	26.999	1442.6
1Ø5.Ø	1Ø6.4Ø	-1.374	26.9Ø1	33.555	27.Ø21	1442.6
1Ø6.Ø	1Ø7.4Ø	-1.365	26.925	33.578	27.Ø4Ø	1442.7
1Ø7.Ø	1Ø8.5Ø	-1.347	26.927	33.56Ø	27.Ø25	1442.8
1Ø8.Ø	1Ø9.4Ø	-1.3Ø5	26.976	33.579	27.Ø39	1443.Ø
1Ø9.Ø	11Ø.45	-1.294	26.995	33.592	27.Ø5Ø	1443.1
11Ø.Ø	111.4Ø	-1.27Ø	27.Ø26	33.6Ø8	27.Ø61	1443.3


EXPERIMENT 2303
TEMPERATURE. C
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00
SALINITY O/OO
14.00
18.00
22.00
26.00
30.00
34.00
38.00
SIGMAT
12.00
16.00
20.00
24.00
28.00
32.00
36.00
DEPTH M
10
100
1000
+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN2 EXPERIMENT 2303

LAT.N. 80-35-40 LONG.W. 78-23-50 DATE 031777 G.M.T. 0440

ICE THICKNESS 1.30 M DEPTH INCR 1.00 WATER DEPTH 186 M

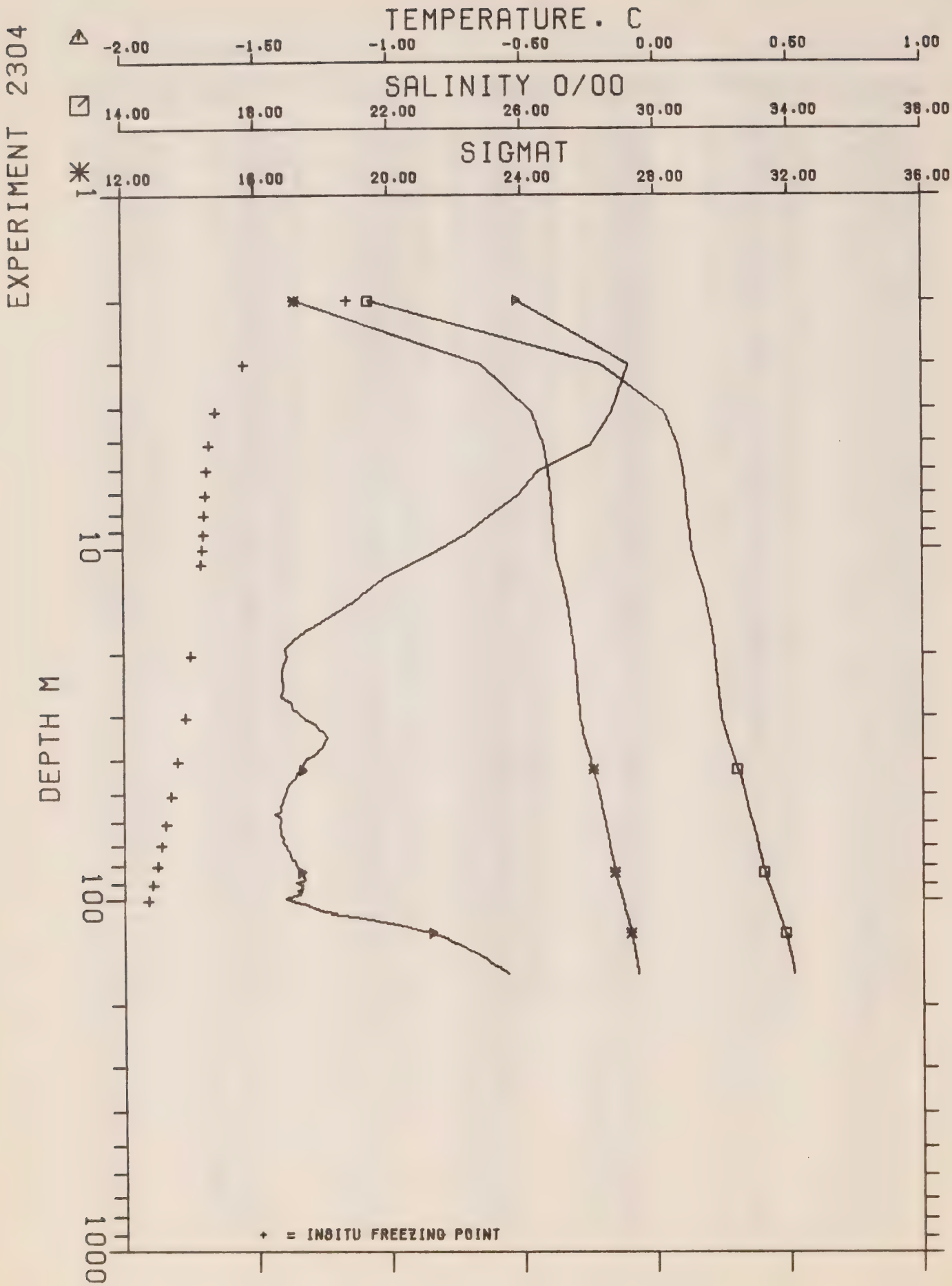
DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
1.0	1.05	-.974	15.610	18.299	14.701	1421.8
2.0	2.05	-.798	18.464	21.841	17.554	1427.4
3.0	3.05	-.334	23.920	28.547	22.948	1438.8
4.0	4.10	-.435	25.042	30.119	24.218	1440.6
5.0	5.10	-.532	25.245	30.483	24.514	1440.6
6.0	6.10	-.580	25.364	30.688	24.682	1440.7
7.0	7.10	-.629	25.410	30.800	24.773	1440.7
8.0	8.10	-.712	25.406	30.878	24.839	1440.4
9.0	9.20	-.784	25.396	30.937	24.888	1440.2
10.0	10.25	-.865	25.389	31.010	24.949	1439.9
11.0	11.20	-1.010	25.374	31.138	25.056	1439.4
12.0	12.25	-1.042	25.423	31.237	25.137	1439.4
13.0	13.25	-1.097	25.477	31.367	25.244	1439.3
14.0	14.25	-1.132	25.517	31.456	25.317	1439.3
15.0	15.30	-1.174	25.539	31.530	25.378	1439.2
16.0	16.25	-1.222	25.547	31.591	25.428	1439.1
17.0	17.35	-1.291	25.539	31.651	25.478	1438.9
18.0	18.30	-1.320	25.546	31.691	25.511	1438.8
19.0	19.35	-1.358	25.535	31.715	25.531	1438.7
20.0	20.35	-1.361	25.547	31.734	25.547	1438.7
21.0	21.35	-1.383	25.545	31.754	25.564	1438.7
22.0	22.35	-1.366	25.572	31.773	25.579	1438.8
23.0	23.35	-1.373	25.579	31.789	25.592	1438.8
24.0	24.45	-1.370	25.601	31.815	25.613	1438.9
25.0	25.40	-1.358	25.625	31.835	25.629	1439.0
26.0	26.45	-1.361	25.634	31.849	25.640	1439.0
27.0	27.35	-1.353	25.652	31.865	25.652	1439.1
28.0	28.50	-1.340	25.679	31.888	25.671	1439.2
29.0	29.45	-1.325	25.711	31.915	25.693	1439.3
30.0	30.50	-1.295	25.758	31.947	25.718	1439.5
31.0	31.45	-1.267	25.811	31.989	25.751	1439.7
32.0	32.55	-1.249	25.853	32.026	25.780	1439.9
33.0	33.50	-1.239	25.889	32.064	25.812	1440.0
34.0	34.55	-1.259	25.906	32.108	25.847	1440.0
35.0	35.55	-1.252	25.926	32.128	25.863	1440.0
36.0	36.60	-1.239	25.971	32.174	25.900	1440.2
37.0	37.55	-1.250	25.985	32.204	25.924	1440.2
38.0	38.60	-1.267	26.010	32.256	25.967	1440.2
39.0	39.65	-1.292	26.027	32.306	26.008	1440.2
40.0	40.60	-1.308	26.042	32.343	26.039	1440.2
41.0	41.70	-1.314	26.061	32.375	26.065	1440.2
42.0	42.65	-1.338	26.066	32.406	26.091	1440.1
43.0	43.65	-1.354	26.092	32.459	26.134	1440.2
44.0	44.70	-1.366	26.115	32.503	26.169	1440.2
45.0	45.70	-1.377	26.129	32.533	26.194	1440.2
46.0	46.70	-1.378	26.146	32.557	26.213	1440.2
47.0	47.70	-1.406	26.146	32.587	26.239	1440.2
48.0	48.75	-1.409	26.157	32.604	26.253	1440.2
49.0	49.75	-1.408	26.175	32.628	26.272	1440.2
50.0	50.80	-1.417	26.186	32.652	26.292	1440.3
51.0	51.80	-1.417	26.205	32.677	26.312	1440.3
52.0	52.80	-1.429	26.215	32.704	26.334	1440.3
53.0	53.85	-1.444	26.217	32.722	26.349	1440.3
54.0	54.85	-1.459	26.223	32.746	26.369	1440.3
55.0	55.85	-1.453	26.241	32.764	26.383	1440.3
56.0	56.90	-1.458	26.253	32.785	26.400	1440.3
57.0	57.90	-1.463	26.263	32.804	26.416	1440.4
58.0	58.90	-1.470	26.270	32.821	26.429	1440.4
59.0	59.85	-1.480	26.273	32.835	26.442	1440.4
60.0	60.95	-1.474	26.291	32.853	26.456	1440.4
61.0	61.90	-1.491	26.295	32.876	26.475	1440.4
62.0	63.00	-1.435	26.353	32.895	26.489	1440.7

EXPERIMENT 2303

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
63.Ø	63.95	-1.428	26.372	32.911	26.5Ø2	144Ø.8
64.Ø	65.ØØ	-1.4Ø9	26.398	32.926	26.513	144Ø.9
65.Ø	66.ØØ	-1.457	26.374	32.945	26.53Ø	144Ø.7
66.Ø	67.ØØ	-1.451	26.392	32.963	26.544	144Ø.8
67.Ø	68.Ø5	-1.455	26.398	32.975	26.554	144Ø.8
68.Ø	69.ØØ	-1.458	26.4Ø4	32.985	26.563	144Ø.8
69.Ø	7Ø.Ø5	-1.47Ø	26.4Ø4	32.998	26.573	144Ø.8
7Ø.Ø	71.ØØ	-1.5ØØ	26.391	33.Ø13	26.586	144Ø.7
71.Ø	72.1Ø	-1.465	26.429	33.Ø27	26.596	144Ø.9
72.Ø	73.1Ø	-1.45Ø	26.453	33.Ø43	26.6Ø9	1441.Ø
73.Ø	74.15	-1.449	26.462	33.Ø53	26.617	1441.Ø
74.Ø	75.15	-1.442	26.481	33.Ø71	26.632	1441.1
75.Ø	76.15	-1.446	26.487	33.Ø83	26.641	1441.1
76.Ø	77.15	-1.46Ø	26.488	33.Ø99	26.655	1441.1
77.Ø	78.15	-1.453	26.5Ø2	33.11Ø	26.663	1441.2
78.Ø	79.2Ø	-1.438	26.524	33.123	26.674	1441.3
79.Ø	8Ø.2Ø	-1.426	26.546	33.14Ø	26.687	1441.4
8Ø.Ø	81.25	-1.4Ø7	26.579	33.163	26.7Ø5	1441.5
81.Ø	82.2Ø	-1.429	26.57Ø	33.175	26.716	1441.4
82.Ø	83.3Ø	-1.4Ø8	26.598	33.19Ø	26.727	1441.6
83.Ø	84.25	-1.416	26.6Ø7	33.2Ø9	26.743	1441.6
84.Ø	85.3Ø	-1.4Ø6	26.625	33.223	26.754	1441.7
85.Ø	86.3Ø	-1.398	26.642	33.237	26.765	1441.7
86.Ø	87.35	-1.377	26.677	33.262	26.784	1441.9
87.Ø	88.35	-1.393	26.677	33.279	26.799	1441.9
88.Ø	89.35	-1.381	26.7Ø2	33.299	26.814	1442.Ø
89.Ø	9Ø.3Ø	-1.391	26.7Ø7	33.317	26.829	1442.Ø
9Ø.Ø	91.4Ø	-1.384	26.724	33.331	26.841	1442.Ø
91.Ø	92.35	-1.386	26.728	33.339	26.847	1442.Ø
92.Ø	93.45	-1.378	26.752	33.361	26.865	1442.1
93.Ø	94.45	-1.392	26.755	33.38Ø	26.881	1442.1
94.Ø	95.45	-1.389	26.767	33.394	26.892	1442.2
95.Ø	96.4Ø	-1.397	26.77Ø	33.4Ø7	26.9Ø2	1442.2
96.Ø	97.5Ø	-1.378	26.796	33.42Ø	26.913	1442.3
97.Ø	98.45	-1.382	26.8Ø9	33.442	26.93Ø	1442.3
98.Ø	99.55	-1.4Ø2	26.8Ø2	33.453	26.94Ø	1442.3
99.Ø	1ØØ.5Ø	-1.4Ø7	26.814	33.475	26.958	1442.3
1ØØ.Ø	1Ø1.6Ø	-1.4Ø2	26.825	33.485	26.965	1442.3
1Ø1.Ø	1Ø2.55	-1.4Ø3	26.836	33.5ØØ	26.978	1442.4
1Ø2.Ø	1Ø3.55	-1.391	26.855	33.513	26.988	1442.5
1Ø3.Ø	1Ø4.55	-1.359	26.894	33.529	27.ØØØ	1442.6
1Ø4.Ø	1Ø5.6Ø	-1.351	26.9Ø8	33.539	27.ØØ8	1442.7
1Ø5.Ø	1Ø6.6Ø	-1.332	26.94Ø	33.561	27.Ø26	1442.8
1Ø6.Ø	1Ø7.65	-1.313	26.966	33.575	27.Ø36	1443.Ø
1Ø7.Ø	1Ø8.65	-1.289	26.996	33.59Ø	27.Ø47	1443.1
1Ø8.Ø	1Ø9.65	-1.285	27.Ø11	33.6Ø5	27.Ø6Ø	1443.2
1Ø9.Ø	11Ø.65	-1.269	27.Ø27	33.6Ø9	27.Ø62	1443.3
11Ø.Ø	111.65	-1.227	27.Ø79	33.632	27.Ø8Ø	1443.5
111.Ø	112.7Ø	-1.2Ø1	27.115	33.651	27.Ø94	1443.7
112.Ø	113.65	-1.174	27.145	33.661	27.1Ø2	1443.8
113.Ø	114.75	-1.15Ø	27.175	33.675	27.113	1444.Ø
114.Ø	115.7Ø	-1.114	27.217	33.692	27.125	1444.2
115.Ø	116.8Ø	-1.Ø93	27.245	33.7Ø6	27.135	1444.3
116.Ø	117.75	-1.Ø58	27.287	33.724	27.149	1444.5
117.Ø	118.85	-1.Ø34	27.317	33.737	27.159	1444.7
118.Ø	119.8Ø	-1.Ø16	27.338	33.745	27.164	1444.8
119.Ø	12Ø.85	-1.ØØ3	27.354	33.752	27.17Ø	1444.9
12Ø.Ø	121.9Ø	-.973	27.389	33.765	27.18Ø	1445.1
121.Ø	122.8Ø	-.962	27.4Ø5	33.775	27.187	1445.1
122.Ø	123.9Ø	-.933	27.438	33.786	27.194	1445.3
123.Ø	124.9Ø	-.9Ø5	27.475	33.8Ø4	27.2Ø8	1445.5
124.Ø	125.95	-.893	27.493	33.814	27.216	1445.6
125.Ø	127.ØØ	-.873	27.52Ø	33.828	27.226	1445.7
126.Ø	127.95	-.858	27.537	33.834	27.231	1445.8
127.Ø	129.ØØ	-.834	27.567	33.848	27.241	1445.9
128.Ø	129.95	-.82Ø	27.589	33.861	27.251	1446.Ø
129.Ø	131.Ø5	-.8Ø7	27.6Ø5	33.868	27.257	1446.1

EXPERIMENT 2303

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
13Ø.Ø	132.ØØ	-.795	27.624	33.879	27.265	1446.2
131.Ø	133.Ø5	-.784	27.64Ø	33.889	27.272	1446.3
132.Ø	134.Ø5	-.767	27.663	33.9ØØ	27.281	1446.4
133.Ø	135.15	-.755	27.683	33.913	27.291	1446.5
134.Ø	136.Ø5	-.744	27.7ØØ	33.923	27.299	1446.6
135.Ø	137.15	-.734	27.716	33.932	27.3Ø6	1446.7
136.Ø	138.1Ø	-.719	27.738	33.945	27.316	1446.8
137.Ø	139.15	-.711	27.753	33.955	27.323	1446.8
138.Ø	14Ø.15	-.7Ø2	27.767	33.964	27.33Ø	1446.9
139.Ø	141.2Ø	-.697	27.788	33.986	27.348	1447.Ø
14Ø.Ø	142.2Ø	-.686	27.8ØØ	33.99Ø	27.35Ø	1447.1
141.Ø	143.2Ø	-.678	27.8Ø6	33.987	27.348	1447.1
142.Ø	144.15	-.67Ø	27.819	33.996	27.355	1447.2
143.Ø	145.25	-.662	27.832	34.ØØ3	27.36Ø	1447.2
144.Ø	146.25	-.654	27.846	34.Ø13	27.368	1447.3
145.Ø	147.25	-.646	27.858	34.Ø2Ø	27.373	1447.4
146.Ø	148.3Ø	-.64Ø	27.87Ø	34.Ø29	27.38Ø	1447.4
147.Ø	149.25	-.634	27.881	34.Ø36	27.386	1447.5
148.Ø	15Ø.35	-.628	27.891	34.Ø42	27.39Ø	1447.5
149.Ø	151.35	-.622	27.9Ø1	34.Ø48	27.395	1447.6
15Ø.Ø	152.35	-.617	27.91Ø	34.Ø55	27.4ØØ	1447.6
151.Ø	153.35	-.611	27.92Ø	34.Ø61	27.4Ø5	1447.7
152.Ø	154.35	-.6Ø5	27.93Ø	34.Ø67	27.41Ø	1447.7
153.Ø	155.4Ø	-.595	27.945	34.Ø75	27.416	1447.8
154.Ø	156.4Ø	-.587	27.96Ø	34.Ø85	27.423	1447.9
155.Ø	157.4Ø	-.58Ø	27.97Ø	34.Ø9Ø	27.427	1447.9
156.Ø	158.45	-.574	27.981	34.Ø98	27.433	1448.Ø
157.Ø	159.5Ø	-.567	27.992	34.1Ø5	27.439	1448.Ø
158.Ø	16Ø.45	-.562	28.ØØ2	34.112	27.444	1448.1
159.Ø	161.55	-.554	28.Ø15	34.119	27.45Ø	1448.2
16Ø.Ø	162.5Ø	-.545	28.Ø28	34.127	27.456	1448.2
161.Ø	163.55	-.539	28.Ø38	34.132	27.459	1448.3
162.Ø	164.5Ø	-.531	28.Ø53	34.143	27.468	1448.4
163.Ø	165.6Ø	-.525	28.Ø62	34.149	27.472	1448.4
164.Ø	166.55	-.524	28.Ø66	34.151	27.474	1448.4
165.Ø	167.65	-.519	28.Ø76	34.158	27.48Ø	1448.5
166.Ø	168.65	-.514	28.Ø83	34.162	27.483	1448.5
167.Ø	169.65	-.5Ø8	28.Ø9Ø	34.165	27.484	1448.6
168.Ø	17Ø.65	-.5Ø2	28.1ØØ	34.171	27.489	1448.6
169.Ø	171.7Ø	-.497	28.1Ø9	34.176	27.493	1448.7
17Ø.Ø	172.7Ø	-.49Ø	28.121	34.184	27.499	1448.7
171.Ø	173.7Ø	-.486	28.13Ø	34.19Ø	27.5Ø4	1448.8
172.Ø	174.75	-.483	28.136	34.195	27.5Ø8	1448.8
173.Ø	175.75	-.481	28.141	34.198	27.51Ø	1448.8
174.Ø	176.8Ø	-.47Ø	28.155	34.2Ø4	27.515	1448.9
175.Ø	177.75	-.465	28.163	34.2Ø9	27.519	1449.Ø
176.Ø	178.85	-.459	28.173	34.216	27.523	1449.Ø
177.Ø	179.8Ø	-.446	28.194	34.228	27.533	1449.1
178.Ø	18Ø.8Ø	-.441	28.2Ø2	34.233	27.537	1449.2
179.Ø	181.85	-.436	28.214	34.243	27.544	1449.2
18Ø.Ø	182.85	-.43Ø	28.224	34.248	27.549	1449.3
181.Ø	183.95	-.422	28.234	34.253	27.552	1449.3
182.Ø	184.8Ø	-.414	28.244	34.256	27.554	1449.4


EXPERIMENT 2304
TEMPERATURE. C
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00
SALINITY O/OO
14.00
18.00
22.00
26.00
30.00
34.00
38.00
SIGMAT
12.00
16.00
20.00
24.00
28.00
32.00
36.00
DEPTH M
1
10
100
1000
+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN3 EXPERIMENT 2304

LAT.N. 80-36-00 LONG.W. 78-30-00 DATE 031777 G.M.T. 1940

ICE THICKNESS 1.15 M DEPTH INCR 1.00 WATER DEPTH 165 M

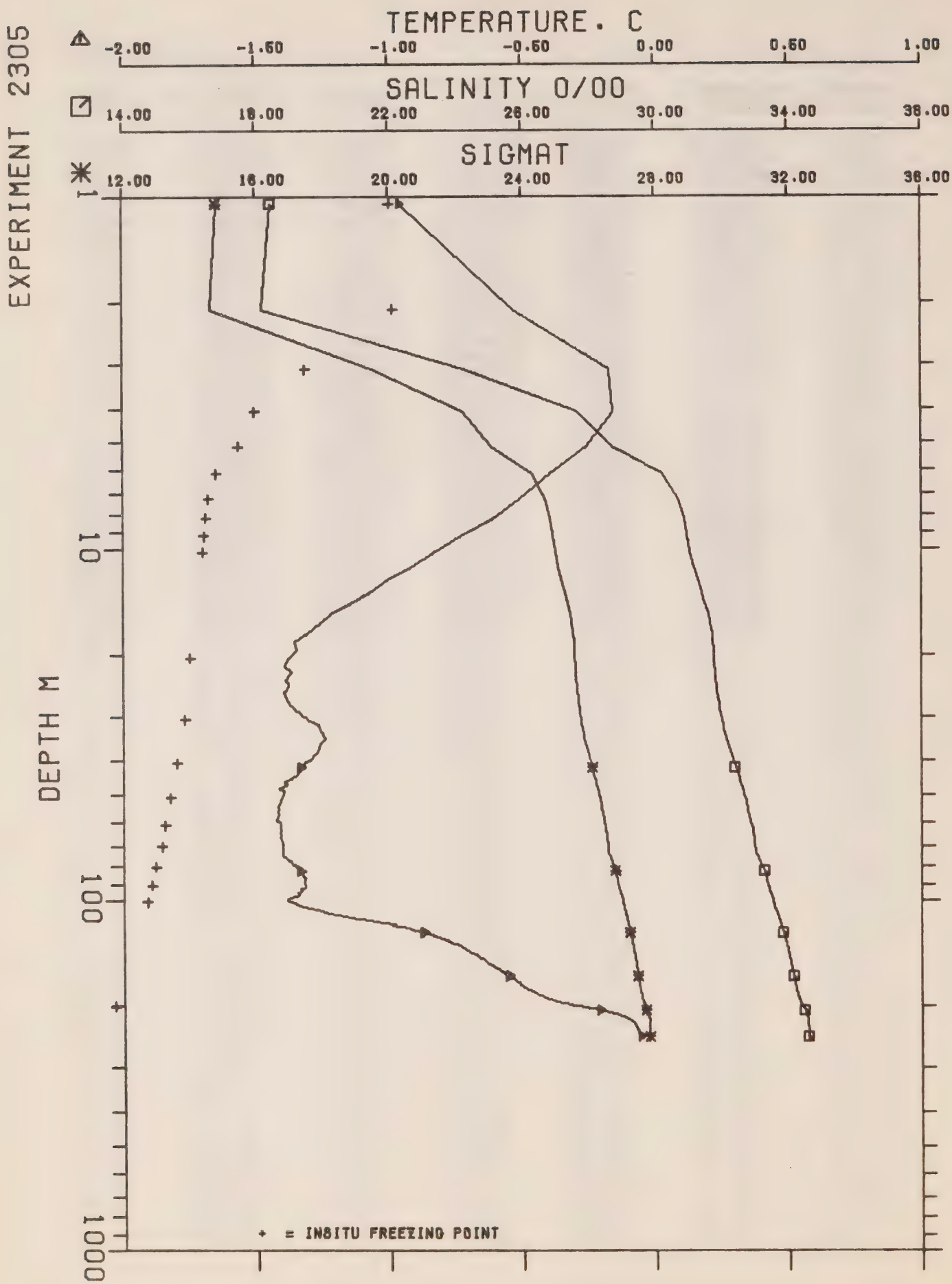
DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
1.0	.95	-.962	15.899	18.661	14.992	1422.3
2.0	2.00	-.522	18.267	21.393	17.194	1428.1
3.0	3.05	-.102	23.943	28.361	22.792	1439.7
4.0	4.15	-.166	25.361	30.272	24.332	1442.0
5.0	5.15	-.244	25.611	30.678	24.663	1442.2
6.0	6.10	-.442	25.591	30.851	24.809	1441.6
7.0	7.15	-.521	25.595	30.935	24.879	1441.3
8.0	8.15	-.625	25.549	30.980	24.918	1440.9
9.0	9.20	-.713	25.515	31.024	24.957	1440.6
10.0	10.20	-.818	25.475	31.077	25.002	1440.2
11.0	11.20	-.931	25.472	31.189	25.096	1439.8
12.0	12.25	-1.025	25.501	31.325	25.208	1439.6
13.0	13.25	-1.087	25.526	31.422	25.288	1439.5
14.0	14.25	-1.142	25.545	31.505	25.356	1439.3
15.0	15.30	-1.203	25.551	31.576	25.415	1439.2
16.0	16.20	-1.260	25.544	31.626	25.457	1439.0
17.0	17.30	-1.322	25.533	31.675	25.498	1438.8
18.0	18.30	-1.367	25.529	31.717	25.534	1438.6
19.0	19.30	-1.396	25.526	31.743	25.555	1438.6
20.0	20.35	-1.383	25.556	31.770	25.577	1438.7
21.0	21.30	-1.399	25.563	31.796	25.598	1438.7
22.0	22.35	-1.404	25.572	31.813	25.612	1438.7
23.0	23.40	-1.404	25.583	31.827	25.623	1438.7
24.0	24.40	-1.402	25.595	31.841	25.635	1438.8
25.0	25.40	-1.399	25.612	31.861	25.650	1438.8
26.0	26.40	-1.410	25.621	31.884	25.670	1438.8
27.0	27.45	-1.371	25.667	31.905	25.686	1439.0
28.0	28.45	-1.364	25.688	31.926	25.702	1439.1
29.0	29.50	-1.339	25.723	31.947	25.719	1439.3
30.0	30.45	-1.321	25.757	31.973	25.739	1439.4
31.0	31.55	-1.281	25.806	31.997	25.758	1439.7
32.0	32.50	-1.272	25.836	32.027	25.782	1439.8
33.0	33.60	-1.245	25.885	32.065	25.812	1440.0
34.0	34.55	-1.237	25.923	32.108	25.847	1440.1
35.0	35.60	-1.248	25.947	32.152	25.882	1440.1
36.0	36.55	-1.254	25.969	32.188	25.912	1440.1
37.0	37.60	-1.269	25.995	32.238	25.953	1440.2
38.0	38.60	-1.287	26.017	32.287	25.993	1440.2
39.0	39.65	-1.313	26.029	32.331	26.029	1440.1
40.0	40.60	-1.324	26.047	32.366	26.058	1440.1
41.0	41.65	-1.337	26.064	32.403	26.088	1440.1
42.0	42.65	-1.333	26.088	32.431	26.110	1440.2
43.0	43.70	-1.351	26.103	32.471	26.143	1440.2
44.0	44.65	-1.354	26.125	32.503	26.170	1440.2
45.0	45.70	-1.370	26.141	32.542	26.202	1440.2
46.0	46.70	-1.382	26.154	32.573	26.227	1440.2
47.0	47.80	-1.388	26.168	32.598	26.247	1440.3
48.0	48.70	-1.392	26.185	32.625	26.269	1440.3
49.0	49.80	-1.394	26.204	32.653	26.291	1440.3
50.0	50.75	-1.401	26.215	32.675	26.310	1440.4
51.0	51.85	-1.405	26.228	32.696	26.327	1440.4
52.0	52.80	-1.406	26.242	32.716	26.343	1440.4
53.0	53.85	-1.415	26.251	32.737	26.360	1440.4
54.0	54.85	-1.411	26.269	32.757	26.376	1440.5
55.0	55.85	-1.412	26.284	32.778	26.394	1440.5
56.0	56.90	-1.433	26.282	32.797	26.410	1440.5
57.0	57.90	-1.417	26.305	32.811	26.421	1440.6
58.0	58.95	-1.410	26.325	32.831	26.436	1440.7
59.0	59.90	-1.412	26.346	32.861	26.460	1440.7
60.0	61.00	-1.414	26.361	32.883	26.479	1440.8
61.0	61.90	-1.413	26.378	32.905	26.496	1440.8
62.0	63.05	-1.409	26.397	32.926	26.513	1440.9

EXPERIMENT 2304

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
63.Ø	63.95	-1.4Ø9	26.412	32.946	26.53Ø	144Ø.9
64.Ø	65.Ø5	-1.4Ø9	26.424	32.961	26.542	1441.Ø
65.Ø	65.95	-1.4Ø4	26.443	32.982	26.558	1441.Ø
66.Ø	67.1Ø	-1.4Ø2	26.456	32.997	26.57Ø	1441.1
67.Ø	68.Ø5	-1.4Ø3	26.468	33.Ø13	26.584	1441.1
68.Ø	69.Ø5	-1.399	26.482	33.Ø28	26.596	1441.2
69.Ø	7Ø.15	-1.391	26.497	33.Ø4Ø	26.6Ø5	1441.2
7Ø.Ø	71.Ø5	-1.388	26.5Ø9	33.Ø52	26.615	1441.3
71.Ø	72.15	-1.381	26.526	33.Ø68	26.627	1441.4
72.Ø	73.Ø5	-1.382	26.539	33.Ø85	26.642	1441.4
73.Ø	74.2Ø	-1.375	26.56Ø	33.1Ø6	26.658	1441.5
74.Ø	75.1Ø	-1.375	26.572	33.121	26.671	1441.5
75.Ø	76.15	-1.37Ø	26.584	33.132	26.679	1441.6
76.Ø	77.15	-1.359	26.6Ø5	33.148	26.692	1441.7
77.Ø	78.2Ø	-1.357	26.616	33.16Ø	26.7Ø2	1441.7
78.Ø	79.2Ø	-1.356	26.628	33.176	26.714	1441.7
79.Ø	8Ø.25	-1.349	26.647	33.194	26.729	1441.8
8Ø.Ø	81.25	-1.343	26.664	33.2Ø9	26.741	1441.9
81.Ø	82.2Ø	-1.335	26.68Ø	33.222	26.751	1442.Ø
82.Ø	83.3Ø	-1.337	26.687	33.233	26.76Ø	1442.Ø
83.Ø	84.3Ø	-1.332	26.7Ø3	33.249	26.773	1442.Ø
84.Ø	85.35	-1.327	26.718	33.263	26.784	1442.1
85.Ø	86.3Ø	-1.325	26.733	33.281	26.798	1442.2
86.Ø	87.4Ø	-1.321	26.75Ø	33.299	26.813	1442.2
87.Ø	88.35	-1.338	26.755	33.325	26.834	1442.2
88.Ø	89.4Ø	-1.356	26.75Ø	33.338	26.845	1442.1
89.Ø	9Ø.4Ø	-1.33Ø	26.784	33.355	26.858	1442.3
9Ø.Ø	91.45	-1.335	26.792	33.371	26.871	1442.3
91.Ø	92.35	-1.33Ø	26.811	33.39Ø	26.887	1442.4
92.Ø	93.5Ø	-1.349	26.812	33.412	26.9Ø5	1442.3
93.Ø	94.45	-1.336	26.834	33.427	26.917	1442.4
94.Ø	95.5Ø	-1.344	26.841	33.445	26.932	1442.4
95.Ø	96.4Ø	-1.341	26.854	33.459	26.943	1442.5
96.Ø	97.55	-1.365	26.847	33.475	26.957	1442.4
97.Ø	98.45	-1.397	26.833	33.492	26.971	1442.3
98.Ø	99.55	-1.382	26.855	33.5Ø4	26.981	1442.4
99.Ø	1ØØ.55	-1.365	26.878	33.516	26.99Ø	1442.5
1ØØ.Ø	1Ø1.6Ø	-1.354	26.9Ø4	33.539	27.ØØ8	1442.6
1Ø1.Ø	1Ø2.6Ø	-1.324	26.939	33.554	27.Ø19	1442.8
1Ø2.Ø	1Ø3.6Ø	-1.311	26.963	33.571	27.Ø33	1442.9
1Ø3.Ø	1Ø4.6Ø	-1.291	26.989	33.584	27.Ø43	1443.Ø
1Ø4.Ø	1Ø5.65	-1.276	27.Ø11	33.597	27.Ø53	1443.1
1Ø5.Ø	1Ø6.7Ø	-1.259	27.Ø32	33.6Ø6	27.Ø6Ø	1443.3
1Ø6.Ø	1Ø7.65	-1.245	27.Ø55	33.622	27.Ø72	1443.4
1Ø7.Ø	1Ø8.75	-1.2Ø5	27.Ø97	33.634	27.Ø81	1443.6
1Ø8.Ø	1Ø9.65	-1.225	27.Ø91	33.647	27.Ø92	1443.5
1Ø9.Ø	11Ø.75	-1.182	27.139	33.664	27.1Ø4	1443.8
11Ø.Ø	111.75	-1.141	27.181	33.675	27.112	1444.Ø
111.Ø	112.7Ø	-1.1Ø4	27.227	33.696	27.128	1444.2
112.Ø	113.75	-1.Ø76	27.264	33.715	27.142	1444.4
113.Ø	114.7Ø	-1.Ø52	27.293	33.726	27.151	1444.5
114.Ø	115.8Ø	-1.Ø33	27.319	33.741	27.161	1444.7
115.Ø	116.8Ø	-.995	27.359	33.752	27.169	1444.9
116.Ø	117.8Ø	-.974	27.385	33.764	27.178	1445.Ø
117.Ø	118.85	-.945	27.419	33.776	27.187	1445.2
118.Ø	119.8Ø	-.931	27.44Ø	33.789	27.197	1445.3
119.Ø	12Ø.9Ø	-.912	27.464	33.799	27.2Ø5	1445.4
12Ø.Ø	121.85	-.891	27.49Ø	33.811	27.214	1445.5
121.Ø	122.85	-.868	27.521	33.826	27.225	1445.7
122.Ø	123.95	-.847	27.55Ø	33.842	27.237	1445.8
123.Ø	124.9Ø	-.834	27.569	33.853	27.245	1445.9
124.Ø	126.ØØ	-.82Ø	27.589	33.864	27.254	1446.Ø
125.Ø	126.95	-.8Ø7	27.6Ø8	33.875	27.262	1446.1
126.Ø	128.ØØ	-.792	27.627	33.882	27.267	1446.2
127.Ø	129.Ø5	-.784	27.64Ø	33.89Ø	27.274	1446.2
128.Ø	13Ø.ØØ	-.774	27.656	33.9ØØ	27.281	1446.3
129.Ø	131.Ø5	-.765	27.67Ø	33.9Ø9	27.288	1446.4

EXPERIMENT 2304

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
13Ø.Ø	132.Ø5	-.756	27.684	33.917	27.294	1446.5
131.Ø	133.Ø5	-.749	27.694	33.922	27.298	1446.5
132.Ø	134.1Ø	-.74Ø	27.7Ø9	33.931	27.3Ø5	1446.6
133.Ø	135.15	-.73Ø	27.723	33.939	27.311	1446.7
134.Ø	136.15	-.721	27.74Ø	33.95Ø	27.32Ø	1446.7
135.Ø	137.15	-.714	27.75Ø	33.956	27.324	1446.8
136.Ø	138.1Ø	-.7Ø5	27.764	33.965	27.331	1446.9
137.Ø	139.25	-.699	27.775	33.971	27.336	1446.9
138.Ø	14Ø.15	-.691	27.787	33.979	27.342	1447.Ø
139.Ø	141.25	-.68Ø	27.8Ø3	33.987	27.348	1447.1
14Ø.Ø	142.15	-.672	27.818	33.998	27.356	1447.1
141.Ø	143.25	-.663	27.833	34.ØØ8	27.364	1447.2
142.Ø	144.2Ø	-.655	27.845	34.Ø14	27.369	1447.3
143.Ø	145.35	-.651	27.853	34.Ø2Ø	27.374	1447.3
144.Ø	146.25	-.645	27.862	34.Ø25	27.377	1447.4
145.Ø	147.35	-.64Ø	27.872	34.Ø32	27.383	1447.4
146.Ø	148.3Ø	-.634	27.883	34.Ø39	27.388	1447.5
147.Ø	149.4Ø	-.628	27.891	34.Ø43	27.391	1447.5
148.Ø	15Ø.35	-.624	27.9Ø1	34.Ø51	27.397	1447.6
149.Ø	151.35	-.619	27.9Ø9	34.Ø56	27.4Ø1	1447.6
15Ø.Ø	152.4Ø	-.614	27.917	34.Ø6Ø	27.4Ø4	1447.7
151.Ø	153.35	-.6Ø6	27.931	34.Ø7Ø	27.412	1447.7
152.Ø	154.4Ø	-.598	27.941	34.Ø74	27.414	1447.8
153.Ø	155.4Ø	-.592	27.953	34.Ø83	27.422	1447.8
154.Ø	156.45	-.588	27.959	34.Ø86	27.424	1447.9
155.Ø	157.4Ø	-.582	27.97Ø	34.Ø93	27.43Ø	1447.9
156.Ø	158.45	-.577	27.979	34.Ø99	27.434	1448.Ø
157.Ø	159.45	-.572	27.987	34.1Ø4	27.438	1448.Ø
158.Ø	16Ø.55	-.566	27.996	34.1Ø8	27.441	1448.1
159.Ø	161.55	-.559	28.ØØ6	34.113	27.445	1448.1


EXPERIMENT 2305
TEMPERATURE. C
-2.00
-1.50
-1.00
-0.50
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SALINITY O/OO
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30.00
34.00
38.00
SIGMAT
12.00
16.00
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24.00
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32.00
36.00
DEPTH M
10
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+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN4 EXPERIMENT 2305

LAT.N. 80-35-00 LONG.W. 78-38-00 DATE 031777 G.M.T. 2330

ICE THICKNESS 1.50 M DEPTH INCR 1.00 WATER DEPTH 247 M

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
1.0	1.05	-.956	15.754	18.471	14.840	1422.1
2.0	2.10	-.529	15.754	18.213	14.637	1423.8
3.0	3.10	-.168	20.688	24.222	19.465	1433.7
4.0	4.10	-.157	23.354	27.646	22.218	1438.4
5.0	5.15	-.260	24.104	28.717	23.083	1439.5
6.0	6.15	-.394	25.126	30.188	24.272	1440.9
7.0	7.25	-.512	25.418	30.692	24.682	1441.0
8.0	8.20	-.612	25.473	30.866	24.826	1440.8
9.0	9.20	-.732	25.462	30.973	24.916	1440.4
10.0	10.25	-.836	25.446	31.057	24.986	1440.1
11.0	11.30	-.922	25.455	31.157	25.069	1439.8
12.0	12.25	-1.004	25.492	31.291	25.180	1439.7
13.0	13.30	-1.076	25.521	31.405	25.274	1439.5
14.0	14.35	-1.145	25.534	31.494	25.347	1439.3
15.0	15.35	-1.222	25.543	31.585	25.423	1439.1
16.0	16.30	-1.259	25.562	31.649	25.476	1439.0
17.0	17.40	-1.308	25.563	31.702	25.520	1438.9
18.0	18.35	-1.354	25.550	31.732	25.545	1438.7
19.0	19.35	-1.346	25.571	31.752	25.561	1438.8
20.0	20.45	-1.382	25.558	31.772	25.578	1438.7
21.0	21.40	-1.394	25.554	31.778	25.584	1438.7
22.0	22.40	-1.366	25.589	31.796	25.597	1438.8
23.0	23.50	-1.391	25.581	31.811	25.610	1438.7
24.0	24.45	-1.375	25.606	31.827	25.622	1438.9
25.0	25.50	-1.396	25.610	31.854	25.645	1438.8
26.0	26.55	-1.387	25.641	31.886	25.671	1438.9
27.0	27.45	-1.373	25.671	31.913	25.692	1439.0
28.0	28.60	-1.353	25.701	31.931	25.706	1439.2
29.0	29.55	-1.328	25.734	31.949	25.720	1439.3
30.0	30.55	-1.304	25.779	31.985	25.749	1439.5
31.0	31.60	-1.267	25.836	32.022	25.778	1439.8
32.0	32.55	-1.260	25.862	32.050	25.800	1439.9
33.0	33.60	-1.252	25.892	32.082	25.826	1440.0
34.0	34.60	-1.241	25.930	32.121	25.857	1440.1
35.0	35.60	-1.259	25.949	32.166	25.894	1440.1
36.0	36.70	-1.263	25.982	32.214	25.933	1440.1
37.0	37.60	-1.272	26.002	32.251	25.963	1440.2
38.0	38.70	-1.287	26.015	32.285	25.991	1440.2
39.0	39.65	-1.297	26.032	32.317	26.018	1440.2
40.0	40.70	-1.319	26.054	32.370	26.061	1440.2
41.0	41.70	-1.334	26.063	32.399	26.085	1440.1
42.0	42.70	-1.338	26.083	32.430	26.110	1440.2
43.0	43.75	-1.348	26.101	32.465	26.138	1440.2
44.0	44.75	-1.363	26.118	32.504	26.170	1440.2
45.0	45.80	-1.393	26.118	32.535	26.196	1440.1
46.0	46.75	-1.385	26.145	32.564	26.219	1440.2
47.0	47.85	-1.414	26.142	32.591	26.242	1440.1
48.0	48.80	-1.395	26.180	32.621	26.266	1440.3
49.0	49.80	-1.400	26.195	32.646	26.287	1440.3
50.0	50.85	-1.406	26.211	32.674	26.309	1440.3
51.0	51.85	-1.408	26.229	32.701	26.331	1440.4
52.0	52.90	-1.413	26.241	32.723	26.349	1440.4
53.0	53.90	-1.419	26.252	32.743	26.366	1440.4
54.0	54.95	-1.415	26.268	32.759	26.379	1440.5
55.0	55.90	-1.421	26.278	32.779	26.395	1440.5
56.0	57.00	-1.414	26.298	32.799	26.411	1440.6
57.0	57.90	-1.419	26.309	32.820	26.427	1440.6
58.0	59.00	-1.425	26.319	32.838	26.443	1440.6
59.0	59.95	-1.409	26.347	32.858	26.459	1440.7
60.0	61.05	-1.409	26.367	32.886	26.481	1440.8
61.0	62.05	-1.410	26.378	32.902	26.494	1440.8
62.0	63.05	-1.407	26.387	32.910	26.500	1440.9

EXPERIMENT 2305

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
63.Ø	64.Ø5	-1.4Ø9	26.392	32.919	26.5Ø8	144Ø.9
64.Ø	65.Ø5	-1.4Ø4	26.4Ø4	32.928	26.515	144Ø.9
65.Ø	66.1Ø	-1.411	26.4Ø8	32.942	26.526	144Ø.9
66.Ø	67.Ø5	-1.4Ø6	26.42Ø	32.951	26.534	1441.Ø
67.Ø	68.15	-1.4ØØ	26.433	32.962	26.542	1441.1
68.Ø	69.Ø5	-1.4Ø1	26.439	32.971	26.549	1441.1
69.Ø	7Ø.15	-1.4Ø1	26.444	32.977	26.554	1441.1
7Ø.Ø	71.15	-1.4Ø1	26.451	32.987	26.562	1441.1
71.Ø	72.15	-1.399	26.454	32.988	26.563	1441.2
72.Ø	73.2Ø	-1.4Ø1	26.463	33.ØØ2	26.575	1441.2
73.Ø	74.1Ø	-1.398	26.49Ø	33.Ø35	26.6Ø1	1441.3
74.Ø	75.2Ø	-1.389	26.52Ø	33.Ø66	26.626	1441.4
75.Ø	76.2Ø	-1.379	26.552	33.Ø98	26.652	1441.5
76.Ø	77.2Ø	-1.372	26.575	33.122	26.671	1441.6
77.Ø	78.3Ø	-1.363	26.6ØØ	33.146	26.69Ø	1441.7
78.Ø	79.25	-1.357	26.629	33.178	26.716	1441.7
79.Ø	8Ø.25	-1.346	26.667	33.217	26.748	1441.9
8Ø.Ø	81.3Ø	-1.34Ø	26.695	33.248	26.772	1442.Ø
81.Ø	82.25	-1.334	26.718	33.272	26.792	1442.Ø
82.Ø	83.35	-1.33Ø	26.732	33.287	26.8Ø3	1442.1
83.Ø	84.35	-1.323	26.744	33.295	26.81Ø	1442.2
84.Ø	85.35	-1.319	26.755	33.3Ø6	26.819	1442.2
85.Ø	86.4Ø	-1.313	26.769	33.317	26.827	1442.3
86.Ø	87.35	-1.32Ø	26.768	33.324	26.833	1442.3
87.Ø	88.45	-1.321	26.776	33.335	26.842	1442.3
88.Ø	89.45	-1.319	26.793	33.354	26.858	1442.3
89.Ø	9Ø.4Ø	-1.316	26.8Ø6	33.37Ø	26.87Ø	1442.4
9Ø.Ø	91.5Ø	-1.317	26.816	33.383	26.881	1442.4
91.Ø	92.45	-1.333	26.811	33.394	26.89Ø	1442.4
92.Ø	93.5Ø	-1.332	26.826	33.413	26.9Ø5	1442.4
93.Ø	94.45	-1.345	26.832	33.434	26.923	1442.4
94.Ø	95.5Ø	-1.338	26.849	33.449	26.935	1442.5
95.Ø	96.55	-1.34Ø	26.86Ø	33.467	26.949	1442.5
96.Ø	97.55	-1.36Ø	26.858	33.485	26.964	1442.5
97.Ø	98.6Ø	-1.383	26.854	33.5Ø5	26.982	1442.4
98.Ø	99.6Ø	-1.385	26.859	33.514	26.989	1442.4
99.Ø	1ØØ.65	-1.372	26.874	33.518	26.992	1442.5
1ØØ.Ø	1Ø1.6Ø	-1.356	26.898	33.533	27.ØØ4	1442.6
1Ø1.Ø	1Ø2.65	-1.348	26.916	33.549	27.Ø16	1442.7
1Ø2.Ø	1Ø3.65	-1.335	26.939	33.565	27.Ø29	1442.8
1Ø3.Ø	1Ø4.7Ø	-1.3Ø2	26.977	33.579	27.Ø39	1443.Ø
1Ø4.Ø	1Ø5.65	-1.272	27.Ø13	33.596	27.Ø52	1443.2
1Ø5.Ø	1Ø6.7Ø	-1.255	27.Ø39	33.611	27.Ø63	1443.3
1Ø6.Ø	1Ø7.7Ø	-1.239	27.Ø61	33.622	27.Ø72	1443.4
1Ø7.Ø	1Ø8.75	-1.223	27.Ø84	33.636	27.Ø83	1443.5
1Ø8.Ø	1Ø9.75	-1.197	27.117	33.651	27.Ø94	1443.7
1Ø9.Ø	11Ø.75	-1.169	27.151	33.667	27.1Ø6	1443.8
11Ø.Ø	111.8Ø	-1.143	27.182	33.679	27.115	1444.Ø
111.Ø	112.75	-1.113	27.217	33.693	27.126	1444.2
112.Ø	113.8Ø	-1.Ø72	27.265	33.711	27.139	1444.4
113.Ø	114.8Ø	-1.Ø5Ø	27.295	33.727	27.151	1444.5
114.Ø	115.9Ø	-1.Ø21	27.326	33.736	27.157	1444.7
115.Ø	116.85	-.98Ø	27.37Ø	33.75Ø	27.167	1444.9
116.Ø	117.9Ø	-.988	27.372	33.761	27.177	1444.9
117.Ø	118.85	-.96Ø	27.4Ø4	33.772	27.185	1445.1
118.Ø	119.9Ø	-.925	27.443	33.786	27.194	1445.3
119.Ø	12Ø.9Ø	-.914	27.461	33.798	27.2Ø4	1445.4
12Ø.Ø	121.95	-.895	27.484	33.8Ø7	27.21Ø	1445.5
121.Ø	122.9Ø	-.874	27.513	33.823	27.223	1445.6
122.Ø	124.ØØ	-.854	27.538	33.833	27.23Ø	1445.8
123.Ø	125.ØØ	-.341	27.559	33.847	27.24Ø	1445.8
124.Ø	126.ØØ	-.829	27.576	33.855	27.247	1445.9
125.Ø	127.ØØ	-.816	27.593	33.863	27.253	1446.Ø
126.Ø	128.Ø5	-.8Ø1	27.614	33.875	27.262	1446.1
127.Ø	129.Ø5	-.786	27.636	33.887	27.271	1446.2
128.Ø	13Ø.ØØ	-.775	27.653	33.897	27.278	1446.3
129.Ø	131.1Ø	-.765	27.667	33.9Ø4	27.284	1446.4

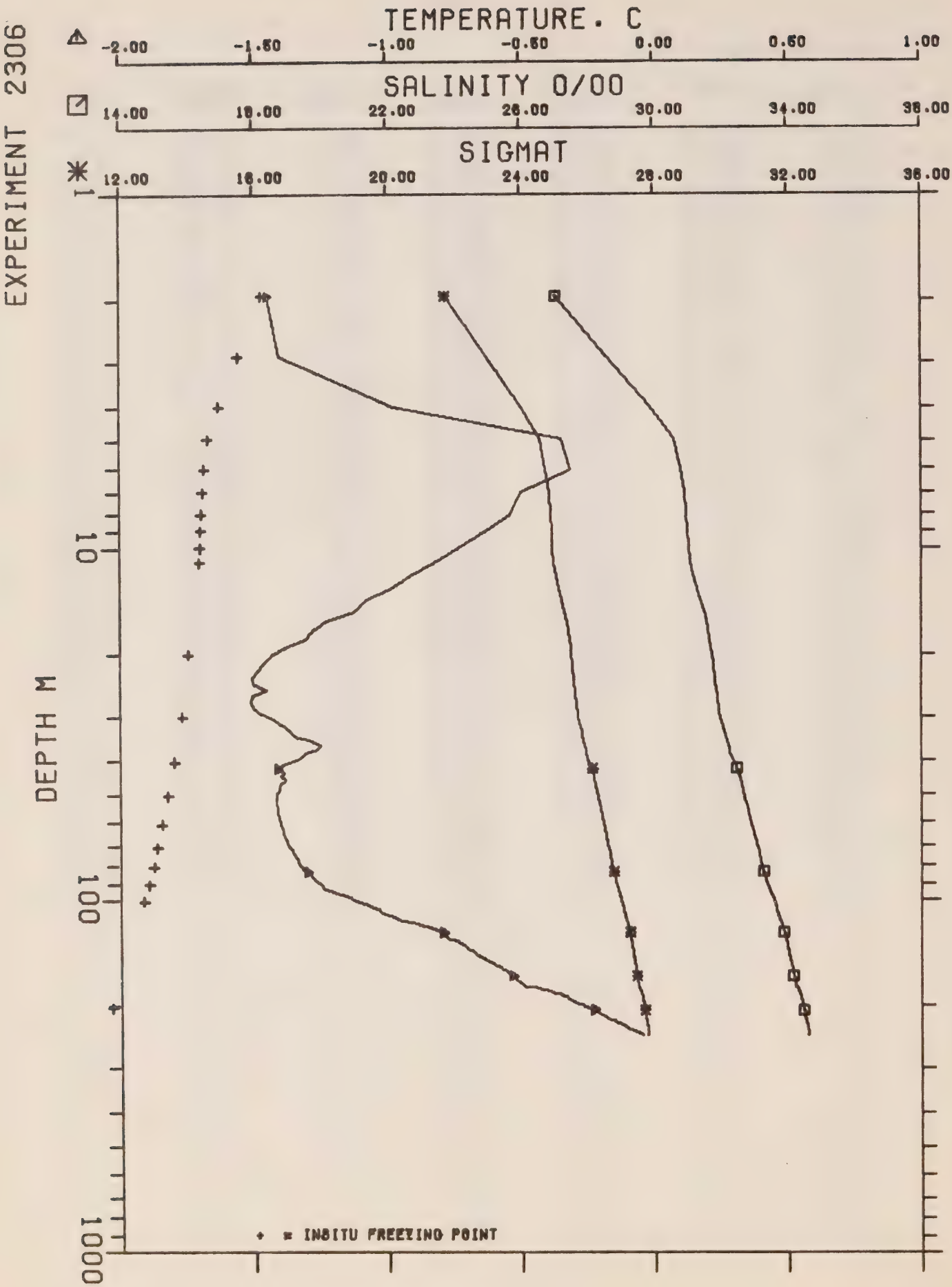
EXPERIMENT 2305

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
13Ø.Ø	132.1Ø	-.755	27.681	33.912	27.29Ø	1446.5
131.Ø	133.15	-.744	27.698	33.922	27.298	1446.5
132.Ø	134.1Ø	-.737	27.713	33.934	27.3Ø7	1446.6
133.Ø	135.2Ø	-.73Ø	27.723	33.939	27.311	1446.7
134.Ø	136.15	-.721	27.736	33.946	27.316	1446.7
135.Ø	137.2Ø	-.713	27.75Ø	33.955	27.323	1446.8
136.Ø	138.15	-.7Ø6	27.761	33.961	27.328	1446.9
137.Ø	139.2Ø	-.7ØØ	27.773	33.971	27.335	1446.9
138.Ø	14Ø.25	-.692	27.784	33.976	27.34Ø	1447.Ø
139.Ø	141.2Ø	-.685	27.797	33.984	27.346	1447.Ø
14Ø.Ø	142.3Ø	-.677	27.8Ø9	33.992	27.351	1447.1
141.Ø	143.25	-.671	27.821	33.999	27.358	1447.2
142.Ø	144.35	-.663	27.832	34.ØØ6	27.362	1447.2
143.Ø	145.35	-.657	27.844	34.Ø14	27.369	1447.3
144.Ø	146.3Ø	-.652	27.853	34.Ø2Ø	27.373	1447.3
145.Ø	147.4Ø	-.646	27.862	34.Ø26	27.378	1447.4
146.Ø	148.35	-.64Ø	27.872	34.Ø32	27.383	1447.4
147.Ø	149.45	-.635	27.881	34.Ø37	27.387	1447.5
148.Ø	15Ø.35	-.63Ø	27.891	34.Ø45	27.393	1447.5
149.Ø	151.4Ø	-.624	27.9ØØ	34.Ø49	27.396	1447.6
15Ø.Ø	152.45	-.617	27.913	34.Ø58	27.4Ø3	1447.6
151.Ø	153.45	-.61Ø	27.925	34.Ø65	27.4Ø8	1447.7
152.Ø	154.45	-.6Ø4	27.934	34.Ø7Ø	27.412	1447.7
153.Ø	155.4Ø	-.598	27.945	34.Ø78	27.418	1447.8
154.Ø	156.5Ø	-.59Ø	27.956	34.Ø84	27.422	1447.9
155.Ø	157.45	-.585	27.965	34.Ø9Ø	27.427	1447.9
156.Ø	158.5Ø	-.58Ø	27.974	34.Ø96	27.432	1448.Ø
157.Ø	159.5Ø	-.574	27.985	34.1Ø2	27.437	1448.Ø
158.Ø	16Ø.5Ø	-.57Ø	27.993	34.1Ø8	27.442	1448.1
159.Ø	161.55	-.565	28.ØØØ	34.112	27.444	1448.1
16Ø.Ø	162.6Ø	-.56Ø	28.ØØ9	34.118	27.448	1448.1
161.Ø	163.65	-.554	28.Ø18	34.122	27.452	1448.2
162.Ø	164.6Ø	-.55Ø	28.Ø28	34.13Ø	27.458	1448.2
163.Ø	165.65	-.543	28.Ø39	34.137	27.463	1448.3
164.Ø	166.6Ø	-.536	28.Ø49	34.142	27.467	1448.4
165.Ø	167.7Ø	-.531	28.Ø58	34.148	27.472	1448.4
166.Ø	168.65	-.524	28.Ø7Ø	34.155	27.478	1448.5
167.Ø	169.7Ø	-.515	28.Ø84	34.164	27.484	1448.5
168.Ø	17Ø.7Ø	-.512	28.Ø89	34.167	27.486	1448.6
169.Ø	171.8Ø	-.51Ø	28.Ø93	34.169	27.488	1448.6
17Ø.Ø	172.75	-.5Ø9	28.Ø97	34.173	27.491	1448.6
171.Ø	173.8Ø	-.5Ø5	28.1Ø3	34.176	27.493	1448.7
172.Ø	174.8Ø	-.499	28.113	34.182	27.498	1448.7
173.Ø	175.8Ø	-.494	28.121	34.186	27.5Ø1	1448.8
174.Ø	176.85	-.488	28.13Ø	34.192	27.5Ø5	1448.8
175.Ø	177.85	-.483	28.139	34.197	27.51Ø	1448.9
176.Ø	178.9Ø	-.478	28.149	34.2Ø5	27.515	1448.9
177.Ø	179.9Ø	-.47Ø	28.162	34.212	27.521	1449.Ø
178.Ø	18Ø.95	-.461	28.175	34.219	27.526	1449.1
179.Ø	181.9Ø	-.454	28.187	34.226	27.532	1449.1
18Ø.Ø	183.ØØ	-.449	28.196	34.233	27.537	1449.2
181.Ø	183.95	-.444	28.2Ø6	34.24Ø	27.542	1449.2
182.Ø	185.ØØ	-.435	28.219	34.246	27.547	1449.3
183.Ø	186.ØØ	-.425	28.233	34.253	27.553	1449.3
184.Ø	187.ØØ	-.423	28.239	34.258	27.556	1449.4
185.Ø	188.Ø5	-.418	28.248	34.265	27.561	1449.4
186.Ø	189.ØØ	-.41Ø	28.26Ø	34.271	27.566	1449.5
187.Ø	19Ø.Ø5	-.4Ø3	28.271	34.277	27.571	1449.5
188.Ø	191.1Ø	-.395	28.284	34.285	27.576	1449.6
189.Ø	192.Ø5	-.381	28.3Ø8	34.3ØØ	27.588	1449.7
19Ø.Ø	193.1Ø	-.369	28.324	34.3Ø9	27.595	1449.8
191.Ø	194.15	-.359	28.342	34.32Ø	27.6Ø3	1449.9
192.Ø	195.15	-.348	28.358	34.329	27.61Ø	145Ø.Ø
193.Ø	196.15	-.334	28.381	34.343	27.62Ø	145Ø.1
194.Ø	197.2Ø	-.318	28.4Ø6	34.358	27.632	145Ø.2
195.Ø	198.15	-.3Ø2	28.432	34.374	27.644	145Ø.3
196.Ø	199.1Ø	-.281	28.466	34.395	27.66Ø	145Ø.4

EXPERIMENT 2305

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
197.Ø	2ØØ.25	-.269	28.486	34.4Ø7	27.67Ø	145Ø.5
198.Ø	2Ø1.2Ø	-.259	28.5Ø2	34.418	27.678	145Ø.6
199.Ø	2Ø2.2Ø	-.246	28.524	34.431	27.688	145Ø.7
2ØØ.Ø	2Ø3.25	-.228	28.55Ø	34.446	27.699	145Ø.8
2Ø1.Ø	2Ø4.25	-.211	28.577	34.462	27.711	145Ø.9
2Ø2.Ø	2Ø5.3Ø	-.198	28.598	34.474	27.72Ø	1451.Ø
2Ø3.Ø	2Ø6.3Ø	-.184	28.619	34.486	27.729	1451.1
2Ø4.Ø	2Ø7.35	-.173	28.635	34.495	27.736	1451.2
2Ø5.Ø	2Ø8.35	-.164	28.649	34.5Ø2	27.741	1451.3
2Ø6.Ø	2Ø9.35	-.154	28.663	34.51Ø	27.747	1451.3
2Ø7.Ø	21Ø.4Ø	-.143	28.68Ø	34.518	27.753	1451.4
2Ø8.Ø	211.45	-.136	28.694	34.528	27.761	1451.5
2Ø9.Ø	212.45	-.128	28.7Ø5	34.534	27.765	1451.5
21Ø.Ø	213.4Ø	-.121	28.714	34.538	27.768	1451.6
211.Ø	214.45	-.116	28.724	34.544	27.773	1451.6
212.Ø	215.5Ø	-.1Ø9	28.734	34.55Ø	27.777	1451.7
213.Ø	216.55	-.1Ø4	28.743	34.555	27.781	1451.7
214.Ø	217.55	-.Ø99	28.752	34.561	27.785	1451.8
215.Ø	218.55	-.Ø94	28.758	34.563	27.787	1451.8
216.Ø	219.6Ø	-.Ø9Ø	28.764	34.566	27.789	1451.9
217.Ø	22Ø.6Ø	-.Ø88	28.769	34.568	27.791	1451.9
218.Ø	221.6Ø	-.Ø85	28.774	34.572	27.793	1451.9
219.Ø	222.6Ø	-.Ø82	28.777	34.572	27.794	1452.Ø
22Ø.Ø	223.65	-.Ø79	28.782	34.574	27.795	1452.Ø
221.Ø	224.65	-.Ø77	28.786	34.577	27.797	1452.Ø
222.Ø	225.6Ø	-.Ø75	28.788	34.577	27.797	1452.1
223.Ø	226.7Ø	-.Ø74	28.792	34.58Ø	27.8ØØ	1452.1
224.Ø	227.7Ø	-.Ø74	28.793	34.581	27.8Ø1	1452.1
225.Ø	228.7Ø	-.Ø72	28.796	34.582	27.8Ø1	1452.1
226.Ø	229.7Ø	-.Ø71	28.799	34.585	27.8Ø3	1452.2
227.Ø	23Ø.75	-.Ø7Ø	28.8Ø1	34.586	27.8Ø4	1452.2
228.Ø	231.7Ø	-.Ø68	28.8Ø3	34.585	27.8Ø3	1452.2
229.Ø	232.75	-.Ø67	28.8Ø6	34.587	27.8Ø5	1452.2
23Ø.Ø	233.8Ø	-.Ø67	28.8Ø7	34.588	27.8Ø5	1452.2
231.Ø	234.75	-.Ø65	28.8Ø9	34.587	27.8Ø5	1452.3
232.Ø	235.85	-.Ø64	28.811	34.588	27.8Ø6	1452.3
233.Ø	236.85	-.Ø64	28.813	34.591	27.8Ø8	1452.3
234.Ø	237.8Ø	-.Ø64	28.814	34.592	27.8Ø9	1452.3
235.Ø	238.9Ø	-.Ø61	28.817	34.591	27.8Ø8	1452.4
236.Ø	239.9Ø	-.Ø61	28.818	34.593	27.8Ø9	1452.4
237.Ø	24Ø.85	-.Ø59	28.82Ø	34.593	27.8Ø9	1452.4
238.Ø	241.9Ø	-.Ø59	28.822	34.594	27.81Ø	1452.4
239.Ø	242.95	-.Ø58	28.823	34.594	27.81Ø	1452.4
24Ø.Ø	243.95	-.Ø58	28.824	34.595	27.811	1452.5
241.Ø	245.ØØ	-.Ø58	28.826	34.597	27.812	1452.5
242.Ø	246.ØØ	-.Ø56	28.827	34.595	27.811	1452.5




EXPERIMENT 2306
TEMPERATURE. C
-2.00
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SALINITY 0/00
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18.00
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SIGMAT
12.00
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24.00
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DEPTH M
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+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN5 EXPERIMENT 2306

LAT.N. 80-33-30 LONG.W. 80-30-00 DATE 032177 G.M.T. 2045

ICE THICKNESS 1.90 M DEPTH INCR 1.00 WATER DEPTH 241 M

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
1.0	.90	-1.431	18.267	22.045	17.715	1424.6
2.0	1.95	-1.445	22.015	27.040	21.751	1431.5
3.0	2.90	-1.398	23.182	28.569	22.987	1433.8
4.0	4.00	-.977	24.453	29.870	24.031	1437.7
5.0	4.95	-.344	25.480	30.606	24.608	1441.7
6.0	6.00	-.310	25.660	30.809	24.770	1442.1
7.0	7.00	-.502	25.609	30.935	24.878	1441.4
8.0	8.05	-.542	25.608	30.974	24.911	1441.3
9.0	9.00	-.630	25.566	31.007	24.940	1441.0
10.0	10.05	-.734	25.516	31.046	24.975	1440.6
11.0	11.05	-.826	25.476	31.086	25.010	1440.2
12.0	12.05	-.915	25.470	31.169	25.079	1439.9
13.0	13.10	-.989	25.493	31.276	25.167	1439.7
14.0	14.05	-1.000	25.496	31.374	25.249	1439.4
15.0	15.15	-1.127	25.538	31.479	25.335	1439.4
16.0	16.10	-1.232	25.511	31.552	25.396	1439.0
17.0	17.10	-1.279	25.514	31.605	25.440	1438.9
18.0	18.20	-1.308	25.524	31.648	25.476	1438.8
19.0	19.15	-1.386	25.497	31.693	25.514	1438.5
20.0	20.15	-1.434	25.482	31.723	25.539	1438.4
21.0	21.20	-1.463	25.477	31.746	25.559	1438.3
22.0	22.15	-1.486	25.475	31.766	25.576	1438.2
23.0	23.20	-1.503	25.479	31.789	25.595	1438.2
24.0	24.20	-1.500	25.495	31.808	25.610	1438.2
25.0	25.25	-1.448	25.551	31.830	25.626	1438.5
26.0	26.25	-1.505	25.532	31.863	25.655	1438.3
27.0	27.30	-1.509	25.547	31.886	25.674	1438.4
28.0	28.25	-1.500	25.570	31.909	25.692	1438.4
29.0	29.35	-1.481	25.604	31.935	25.712	1438.6
30.0	30.25	-1.435	25.663	31.966	25.737	1438.9
31.0	31.35	-1.404	25.715	32.003	25.765	1439.1
32.0	32.25	-1.380	25.763	32.044	25.798	1439.3
33.0	33.40	-1.360	25.809	32.084	25.830	1439.4
34.0	34.30	-1.347	25.845	32.119	25.858	1439.6
35.0	35.40	-1.278	25.918	32.144	25.877	1439.9
36.0	36.35	-1.251	25.967	32.181	25.906	1440.1
37.0	37.40	-1.265	25.992	32.230	25.946	1440.2
38.0	38.40	-1.310	25.973	32.252	25.965	1440.0
39.0	39.45	-1.328	26.004	32.313	26.015	1440.0
40.0	40.45	-1.369	26.001	32.352	26.048	1439.9
41.0	41.45	-1.395	26.031	32.420	26.103	1439.9
42.0	42.40	-1.411	26.047	32.459	26.135	1439.9
43.0	43.50	-1.385	26.088	32.487	26.157	1440.1
44.0	44.45	-1.400	26.102	32.522	26.186	1440.0
45.0	45.55	-1.379	26.139	32.549	26.207	1440.2
46.0	46.50	-1.402	26.144	32.581	26.234	1440.2
47.0	47.55	-1.407	26.159	32.606	26.254	1440.2
48.0	48.50	-1.406	26.178	32.630	26.274	1440.2
49.0	49.60	-1.413	26.189	32.652	26.291	1440.3
50.0	50.55	-1.414	26.205	32.676	26.311	1440.3
51.0	51.60	-1.414	26.222	32.697	26.328	1440.3
52.0	52.55	-1.417	26.241	32.727	26.352	1440.4
53.0	53.65	-1.414	26.260	32.748	26.369	1440.4
54.0	54.60	-1.412	26.277	32.770	26.387	1440.5
55.0	55.65	-1.411	26.295	32.792	26.405	1440.6
56.0	56.65	-1.409	26.313	32.814	26.422	1440.6
57.0	57.65	-1.407	26.333	32.839	26.443	1440.7
58.0	58.70	-1.404	26.347	32.854	26.455	1440.7
59.0	59.70	-1.402	26.364	32.875	26.472	1440.8
60.0	60.70	-1.399	26.385	32.900	26.492	1440.8
61.0	61.75	-1.393	26.403	32.917	26.506	1440.9
62.0	62.75	-1.389	26.420	32.936	26.521	1441.0

EXPERIMENT 2306

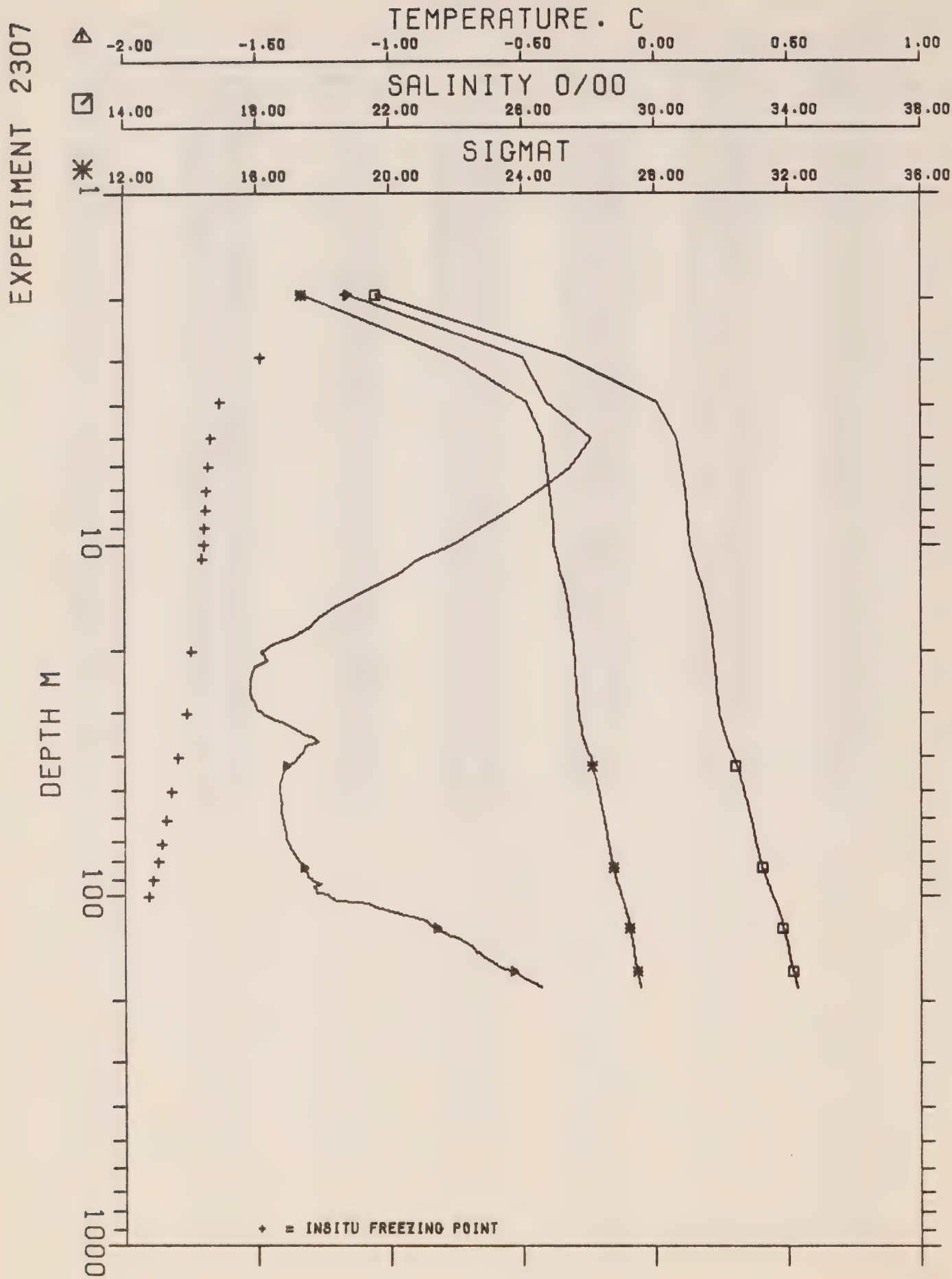
DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
63.Ø	63.75	-1.392	26.434	32.958	26.539	1441.Ø
64.Ø	64.85	-1.388	26.452	32.978	26.555	1441.1
65.Ø	65.75	-1.387	26.466	32.995	26.569	1441.1
66.Ø	66.85	-1.381	26.479	33.ØØ6	26.578	1441.2
67.Ø	67.8Ø	-1.377	26.495	33.Ø23	26.591	1441.2
68.Ø	68.9Ø	-1.375	26.51Ø	33.Ø4Ø	26.6Ø5	1441.3
69.Ø	69.9Ø	-1.371	26.527	33.Ø59	26.62Ø	1441.4
7Ø.Ø	7Ø.85	-1.365	26.546	33.Ø78	26.635	1441.4
71.Ø	71.9Ø	-1.356	26.57Ø	33.1ØØ	26.653	1441.5
72.Ø	72.9Ø	-1.355	26.581	33.114	26.664	1441.6
73.Ø	73.95	-1.351	26.593	33.126	26.673	1441.6
74.Ø	74.95	-1.346	26.6Ø8	33.139	26.684	1441.7
75.Ø	75.95	-1.342	26.618	33.148	26.692	1441.7
76.Ø	76.95	-1.337	26.631	33.159	26.7ØØ	1441.8
77.Ø	77.95	-1.333	26.645	33.174	26.712	1441.8
78.Ø	79.ØØ	-1.328	26.661	33.19Ø	26.725	1441.9
79.Ø	8Ø.Ø5	-1.32Ø	26.679	33.2Ø5	26.737	1442.Ø
8Ø.Ø	81.Ø5	-1.319	26.685	33.211	26.742	1442.Ø
81.Ø	82.Ø5	-1.312	26.7ØØ	33.224	26.752	1442.1
82.Ø	83.1Ø	-1.3ØØ	26.732	33.254	26.776	1442.2
83.Ø	84.Ø5	-1.29Ø	26.756	33.276	26.793	1442.3
84.Ø	85.1Ø	-1.284	26.775	33.294	26.8Ø8	1442.3
85.Ø	86.Ø5	-1.279	26.791	33.3Ø9	26.82Ø	1442.4
86.Ø	87.1Ø	-1.274	26.8Ø5	33.323	26.831	1442.5
87.Ø	88.1Ø	-1.266	26.824	33.34Ø	26.844	1442.5
88.Ø	89.15	-1.253	26.847	33.357	26.858	1442.6
89.Ø	9Ø.15	-1.251	26.866	33.38Ø	26.876	1442.7
9Ø.Ø	91.2Ø	-1.243	26.883	33.393	26.887	1442.8
91.Ø	92.15	-1.239	26.9Ø1	33.413	26.9Ø3	1442.8
92.Ø	93.2Ø	-1.23Ø	26.919	33.426	26.913	1442.9
93.Ø	94.25	-1.212	26.945	33.441	26.925	1443.Ø
94.Ø	95.25	-1.193	26.978	33.466	26.944	1443.2
95.Ø	96.25	-1.168	27.Ø11	33.482	26.957	1443.3
96.Ø	97.25	-1.154	27.Ø39	33.5Ø4	26.974	1443.4
97.Ø	98.3Ø	-1.138	27.Ø65	33.522	26.988	1443.6
98.Ø	99.25	-1.133	27.Ø87	33.545	27.ØØ6	1443.6
99.Ø	1ØØ.3Ø	-1.114	27.114	33.56Ø	27.Ø18	1443.8
1ØØ.Ø	1Ø1.3Ø	-1.Ø98	27.142	33.581	27.Ø34	1443.9
1Ø1.Ø	1Ø2.35	-1.Ø82	27.168	33.597	27.Ø47	1444.Ø
1Ø2.Ø	1Ø3.35	-1.Ø71	27.188	33.611	27.Ø58	1444.1
1Ø3.Ø	1Ø4.35	-1.Ø59	27.2Ø6	33.622	27.Ø66	1444.2
1Ø4.Ø	1Ø5.4Ø	-1.Ø48	27.224	33.634	27.Ø75	1444.3
1Ø5.Ø	1Ø6.35	-1.Ø36	27.246	33.65Ø	27.Ø88	1444.4
1Ø6.Ø	1Ø7.45	-1.Ø24	27.261	33.656	27.Ø93	1444.4
1Ø7.Ø	1Ø8.45	-1.Ø16	27.277	33.669	27.1Ø3	1444.5
1Ø8.Ø	1Ø9.45	-1.ØØ4	27.298	33.683	27.114	1444.6
1Ø9.Ø	11Ø.55	-.987	27.32Ø	33.693	27.122	1444.7
11Ø.Ø	111.45	-.974	27.342	33.7Ø8	27.133	1444.8
111.Ø	112.55	-.964	27.36Ø	33.72Ø	27.143	1444.9
112.Ø	113.55	-.96Ø	27.372	33.733	27.153	1444.9
113.Ø	114.55	-.943	27.395	33.744	27.161	1445.1
114.Ø	115.6Ø	-.9Ø7	27.444	33.77Ø	27.181	1445.3
115.Ø	116.6Ø	-.885	27.475	33.787	27.194	1445.4
116.Ø	117.6Ø	-.877	27.492	33.8ØØ	27.2Ø4	1445.5
117.Ø	118.65	-.857	27.516	33.81Ø	27.212	1445.6
118.Ø	119.6Ø	-.84Ø	27.543	33.827	27.225	1445.7
119.Ø	12Ø.65	-.826	27.563	33.838	27.233	1445.8
12Ø.Ø	121.7Ø	-.815	27.584	33.854	27.245	1445.9
121.Ø	122.55	-.8ØØ	27.6Ø8	33.869	27.257	1446.Ø
122.Ø	123.7Ø	-.794	27.62Ø	33.878	27.264	1446.1
123.Ø	124.65	-.791	27.625	33.88Ø	27.266	1446.1
124.Ø	125.75	-.787	27.633	33.886	27.27Ø	1446.2
125.Ø	126.7Ø	-.781	27.642	33.891	27.275	1446.2
126.Ø	127.75	-.774	27.656	33.9Ø2	27.283	1446.3
127.Ø	128.75	-.765	27.67Ø	33.91Ø	27.289	1446.4
128.Ø	129.7Ø	-.753	27.688	33.92Ø	27.297	1446.4
129.Ø	13Ø.8Ø	-.741	27.71Ø	33.935	27.3Ø9	1446.5

EXPERIMENT 2306

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
13Ø.Ø	131.75	-.734	27.722	33.944	27.315	1446.6
131.Ø	132.8Ø	-.725	27.735	33.951	27.32Ø	1446.7
132.Ø	133.85	-.716	27.75Ø	33.96Ø	27.328	1446.7
133.Ø	134.8Ø	-.711	27.76Ø	33.968	27.334	1446.8
134.Ø	135.85	-.7Ø6	27.769	33.974	27.338	1446.8
135.Ø	136.9Ø	-.7ØØ	27.778	33.979	27.342	1446.9
136.Ø	137.95	-.694	27.789	33.985	27.347	1446.9
137.Ø	138.9Ø	-.687	27.8ØØ	33.992	27.352	1447.Ø
138.Ø	139.95	-.682	27.8Ø8	33.997	27.356	1447.Ø
139.Ø	14Ø.95	-.675	27.819	34.ØØ4	27.361	1447.1
14Ø.Ø	141.9Ø	-.671	27.829	34.Ø12	27.368	1447.1
141.Ø	143.ØØ	-.662	27.841	34.Ø17	27.371	1447.2
142.Ø	144.ØØ	-.657	27.851	34.Ø25	27.377	1447.3
143.Ø	145.Ø5	-.648	27.864	34.Ø32	27.383	1447.3
144.Ø	146.ØØ	-.64Ø	27.877	34.Ø39	27.388	1447.4
145.Ø	147.Ø5	-.634	27.892	34.Ø52	27.399	1447.5
146.Ø	148.1Ø	-.627	27.9ØØ	34.Ø54	27.4ØØ	1447.5
147.Ø	149.1Ø	-.618	27.915	34.Ø64	27.4Ø7	1447.6
148.Ø	15Ø.1Ø	-.613	27.923	34.Ø69	27.411	1447.6
149.Ø	151.1Ø	-.6Ø6	27.934	34.Ø75	27.416	1447.7
15Ø.Ø	152.15	-.599	27.945	34.Ø81	27.421	1447.7
151.Ø	153.15	-.593	27.957	34.Ø91	27.428	1447.8
152.Ø	154.2Ø	-.584	27.971	34.Ø98	27.434	1447.9
153.Ø	155.15	-.576	27.983	34.1Ø5	27.439	1447.9
154.Ø	156.2Ø	-.573	27.989	34.1Ø9	27.442	1448.Ø
155.Ø	157.2Ø	-.566	28.ØØ1	34.116	27.448	1448.Ø
156.Ø	158.25	-.56Ø	28.Ø11	34.123	27.453	1448.1
157.Ø	159.2Ø	-.555	28.Ø19	34.128	27.457	1448.1
158.Ø	16Ø.3Ø	-.549	28.Ø29	34.134	27.461	1448.2
159.Ø	161.25	-.547	28.Ø34	34.138	27.464	1448.2
16Ø.Ø	162.35	-.545	28.Ø39	34.142	27.468	1448.2
161.Ø	163.3Ø	-.541	28.Ø46	34.146	27.47Ø	1448.3
162.Ø	164.3Ø	-.534	28.Ø56	34.151	27.474	1448.3
163.Ø	165.35	-.528	28.Ø67	34.159	27.48Ø	1448.4
164.Ø	166.3Ø	-.522	28.Ø77	34.164	27.485	1448.5
165.Ø	167.4Ø	-.522	28.Ø82	34.171	27.49Ø	1448.5
166.Ø	168.35	-.519	28.Ø88	34.174	27.492	1448.5
167.Ø	169.35	-.514	28.Ø95	34.178	27.496	1448.6
168.Ø	17Ø.4Ø	-.5Ø7	28.1Ø5	34.182	27.499	1448.6
169.Ø	171.4Ø	-.5Ø3	28.113	34.188	27.5Ø3	1448.7
17Ø.Ø	172.45	-.5Ø2	28.116	34.191	27.5Ø5	1448.7
171.Ø	173.45	-.494	28.126	34.194	27.5Ø8	1448.7
172.Ø	174.45	-.492	28.133	34.2Ø1	27.513	1448.8
173.Ø	175.55	-.483	28.146	34.2Ø7	27.518	1448.8
174.Ø	176.5Ø	-.454	28.191	34.236	27.539	1449.Ø
175.Ø	177.5Ø	-.43Ø	28.232	34.263	27.56Ø	1449.2
176.Ø	178.6Ø	-.421	28.247	34.272	27.567	1449.3
177.Ø	179.55	-.4Ø7	28.27Ø	34.287	27.579	1449.4
178.Ø	18Ø.55	-.399	28.287	34.299	27.588	1449.4
179.Ø	181.65	-.389	28.3Ø3	34.31Ø	27.596	1449.5
18Ø.Ø	182.6Ø	-.382	28.316	34.318	27.6Ø2	1449.6
181.Ø	183.65	-.372	28.329	34.324	27.6Ø7	1449.7
182.Ø	184.65	-.354	28.357	34.34Ø	27.619	1449.8
183.Ø	185.65	-.346	28.374	34.353	27.629	1449.8
184.Ø	186.7Ø	-.338	28.387	34.361	27.635	1449.9
185.Ø	187.75	-.332	28.398	34.369	27.641	145Ø.Ø
186.Ø	188.65	-.327	28.4Ø5	34.372	27.644	145Ø.Ø
187.Ø	189.8Ø	-.325	28.4Ø9	34.375	27.646	145Ø.Ø
188.Ø	19Ø.75	-.318	28.417	34.377	27.647	145Ø.1
189.Ø	191.7Ø	-.315	28.425	34.384	27.653	145Ø.1
19Ø.Ø	192.8Ø	-.3Ø8	28.433	34.385	27.654	145Ø.2
191.Ø	193.8Ø	-.3ØØ	28.446	34.394	27.66Ø	145Ø.2
192.Ø	194.8Ø	-.296	28.454	34.399	27.665	145Ø.3
193.Ø	195.85	-.29Ø	28.463	34.4Ø4	27.668	145Ø.3
194.Ø	196.8Ø	-.279	28.476	34.4Ø8	27.671	145Ø.4
195.Ø	197.9Ø	-.271	28.493	34.42Ø	27.68Ø	145Ø.5
196.Ø	198.9Ø	-.266	28.5ØØ	34.424	27.683	145Ø.5

EXPERIMENT 2306

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
197.Ø	199.9Ø	-.263	28.5Ø7	34.43Ø	27.688	145Ø.6
198.Ø	2ØØ.85	-.253	28.519	34.434	27.69Ø	145Ø.6
199.Ø	2Ø1.95	-.246	28.529	34.438	27.693	145Ø.7
2ØØ.Ø	2Ø2.9Ø	-.239	28.54Ø	34.445	27.698	145Ø.7
2Ø1.Ø	2Ø3.9Ø	-.235	28.548	34.45Ø	27.7Ø2	145Ø.8
2Ø2.Ø	2Ø5.ØØ	-.229	28.559	34.458	27.7Ø9	145Ø.8
2Ø3.Ø	2Ø5.95	-.222	28.57Ø	34.464	27.713	145Ø.9
2Ø4.Ø	2Ø7.ØØ	-.214	28.58Ø	34.467	27.716	1451.Ø
2Ø5.Ø	2Ø8.Ø5	-.21Ø	28.586	34.47Ø	27.718	1451.Ø
2Ø6.Ø	2Ø9.ØØ	-.2Ø8	28.591	34.475	27.721	1451.Ø
2Ø7.Ø	21Ø.Ø5	-.2Ø3	28.598	34.477	27.723	1451.1
2Ø8.Ø	211.Ø5	-.199	28.6Ø6	34.482	27.727	1451.1
2Ø9.Ø	212.1Ø	-.194	28.614	34.487	27.73Ø	1451.2
21Ø.Ø	213.1Ø	-.189	28.619	34.488	27.731	1451.2
211.Ø	214.Ø5	-.183	28.626	34.49Ø	27.732	1451.3
212.Ø	215.15	-.178	28.635	34.495	27.736	1451.3
213.Ø	216.15	-.173	28.641	34.498	27.738	1451.3
214.Ø	217.15	-.169	28.65Ø	34.5Ø4	27.743	1451.4
215.Ø	218.2Ø	-.163	28.657	34.5Ø6	27.745	1451.4
216.Ø	219.2Ø	-.152	28.672	34.514	27.75Ø	1451.5
217.Ø	22Ø.25	-.148	28.682	34.521	27.756	1451.6
218.Ø	221.2Ø	-.146	28.686	34.524	27.758	1451.6
219.Ø	222.3Ø	-.137	28.699	34.531	27.763	1451.7
22Ø.Ø	223.25	-.13Ø	28.7Ø8	34.534	27.766	1451.7
221.Ø	224.35	-.127	28.716	34.541	27.77Ø	1451.7
222.Ø	225.35	-.121	28.725	34.545	27.773	1451.8
223.Ø	226.3Ø	-.115	28.736	34.553	27.78Ø	1451.9
224.Ø	227.4Ø	-.112	28.74Ø	34.554	27.78Ø	1451.9
225.Ø	228.35	-.1Ø8	28.746	34.556	27.782	1451.9
226.Ø	229.4Ø	-.1Ø4	28.752	34.559	27.784	1452.Ø
227.Ø	23Ø.4Ø	-.1ØØ	28.759	34.563	27.788	1452.Ø
228.Ø	231.45	-.Ø93	28.768	34.566	27.79Ø	1452.1
229.Ø	232.5Ø	-.Ø83	28.784	34.577	27.798	1452.1
23Ø.Ø	233.45	-.Ø73	28.799	34.584	27.8Ø3	1452.2
231.Ø	234.5Ø	-.Ø7Ø	28.8Ø4	34.587	27.8Ø5	1452.2
232.Ø	235.55	-.Ø68	28.8Ø8	34.59Ø	27.8Ø7	1452.3
233.Ø	236.45	-.Ø61	28.817	34.593	27.8Ø9	1452.3
234.Ø	237.55	-.Ø59	28.822	34.596	27.812	1452.4
235.Ø	238.55	-.Ø56	28.825	34.597	27.812	1452.4
236.Ø	239.5Ø	-.Ø49	28.834	34.6ØØ	27.815	1452.4
237.Ø	24Ø.45	-.Ø46	28.836	34.599	27.814	1452.5


EXPERIMENT 2307
TEMPERATURE. C
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00
SALINITY O/OO
14.00
18.00
22.00
26.00
30.00
34.00
38.00
SIGMAT
12.00
16.00
20.00
24.00
28.00
32.00
36.00
DEPTH M
10
100
1000
+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN6 EXPERIMENT 2307

LAT.N. 80-33-40 LONG.W. 79-51-50 DATE 032177 G.M.T. 2435

ICE THICKNESS 1.50 M DEPTH INCR 1.00 WATER DEPTH 190 M

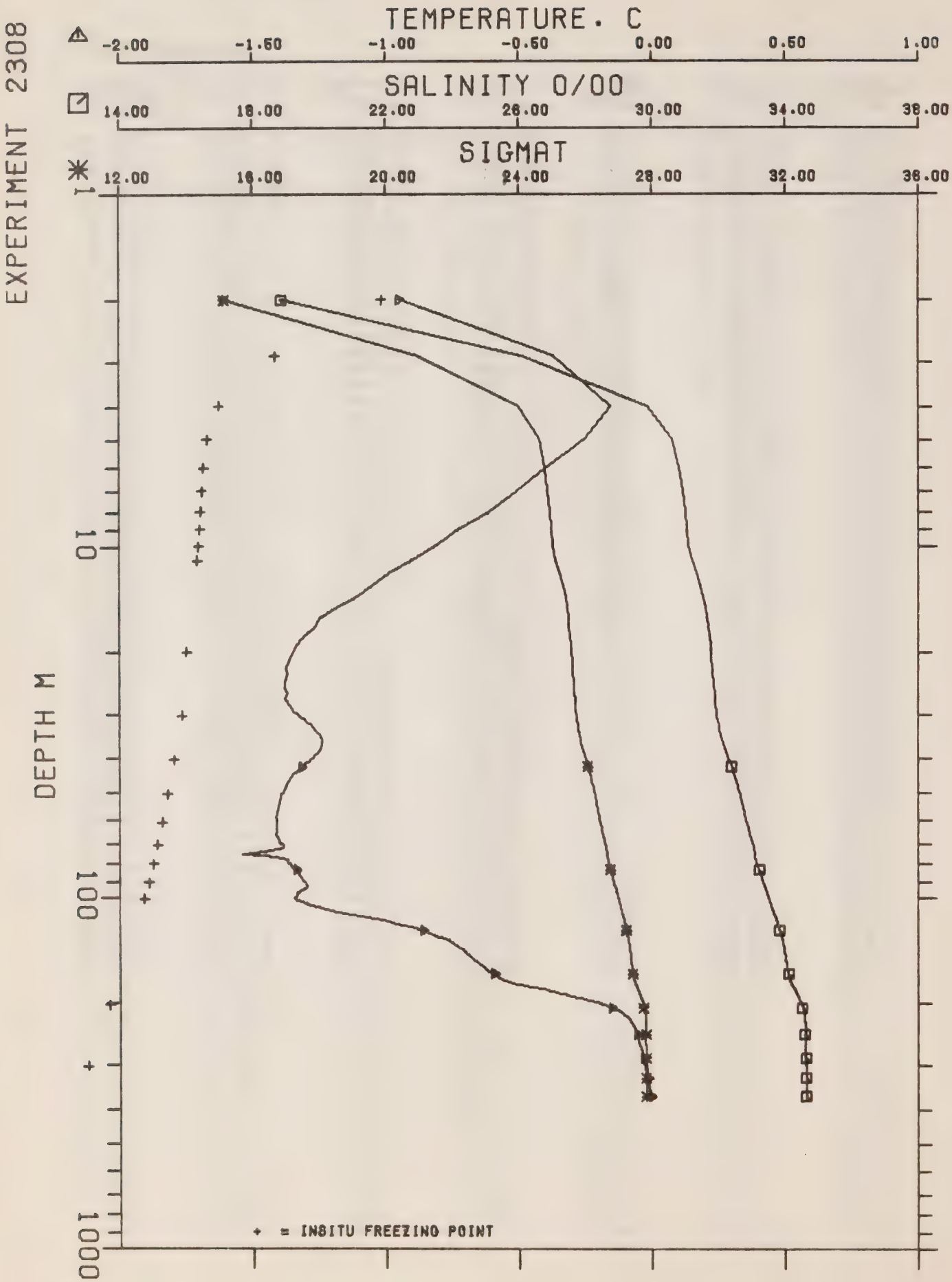
DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
1.0	.95	-1.165	18.464	22.108	17.768	1426.0
2.0	1.95	-1.159	18.075	21.597	17.356	1425.4
3.0	2.95	-.497	22.895	27.355	21.992	1436.4
4.0	3.95	-.406	25.005	30.041	24.154	1440.6
5.0	5.00	-.242	25.581	30.637	24.629	1442.2
6.0	6.00	-.321	25.652	30.809	24.770	1442.1
7.0	7.05	-.441	25.638	30.912	24.857	1441.7
8.0	8.00	-.552	25.594	30.966	24.904	1441.3
9.0	9.00	-.662	25.545	31.011	24.945	1440.8
10.0	10.05	-.767	25.494	31.050	24.979	1440.4
11.0	11.00	-.896	25.473	31.154	25.066	1440.0
12.0	12.10	-.970	25.503	31.271	25.163	1439.8
13.0	13.05	-1.049	25.535	31.395	25.265	1439.6
14.0	14.10	-1.133	25.537	31.485	25.340	1439.4
15.0	15.10	-1.210	25.535	31.562	25.404	1439.1
16.0	16.15	-1.268	25.533	31.620	25.453	1438.9
17.0	17.10	-1.306	25.534	31.660	25.486	1438.8
18.0	18.15	-1.362	25.527	31.709	25.527	1438.7
19.0	19.15	-1.438	25.482	31.728	25.544	1438.3
20.0	20.15	-1.485	25.463	31.750	25.563	1438.2
21.0	21.25	-1.459	25.502	31.775	25.583	1438.3
22.0	22.20	-1.508	25.486	31.805	25.608	1438.2
23.0	23.25	-1.521	25.482	31.814	25.615	1438.1
24.0	24.20	-1.527	25.491	31.831	25.629	1438.1
25.0	25.25	-1.523	25.498	31.836	25.633	1438.2
26.0	26.35	-1.525	25.514	31.859	25.651	1438.2
27.0	27.25	-1.518	25.540	31.888	25.675	1438.3
28.0	28.25	-1.505	25.559	31.899	25.684	1438.4
29.0	29.30	-1.498	25.575	31.912	25.694	1438.5
30.0	30.25	-1.475	25.607	31.932	25.710	1438.6
31.0	31.35	-1.442	25.649	31.954	25.727	1438.8
32.0	32.30	-1.395	25.715	31.993	25.757	1439.1
33.0	33.35	-1.356	25.771	32.027	25.784	1439.4
34.0	34.40	-1.330	25.822	32.069	25.817	1439.6
35.0	35.35	-1.283	25.884	32.103	25.844	1439.9
36.0	36.45	-1.269	25.936	32.158	25.888	1440.0
37.0	37.40	-1.318	25.935	32.209	25.931	1439.9
38.0	38.45	-1.327	25.971	32.267	25.978	1439.9
39.0	39.50	-1.339	26.009	32.332	26.031	1440.0
40.0	40.40	-1.349	26.031	32.371	26.063	1440.0
41.0	41.45	-1.361	26.045	32.403	26.089	1440.0
42.0	42.45	-1.392	26.045	32.436	26.116	1439.9
43.0	43.45	-1.396	26.065	32.468	26.142	1440.0
44.0	44.55	-1.407	26.086	32.507	26.174	1440.0
45.0	45.50	-1.406	26.112	32.542	26.202	1440.1
46.0	46.50	-1.408	26.138	32.579	26.233	1440.1
47.0	47.55	-1.417	26.154	32.610	26.257	1440.1
48.0	48.50	-1.416	26.172	32.633	26.276	1440.2
49.0	49.60	-1.413	26.191	32.655	26.294	1440.3
50.0	50.55	-1.415	26.204	32.675	26.310	1440.3
51.0	51.60	-1.411	26.221	32.694	26.325	1440.4
52.0	52.55	-1.409	26.242	32.720	26.346	1440.4
53.0	53.65	-1.410	26.258	32.741	26.364	1440.5
54.0	54.65	-1.407	26.275	32.761	26.380	1440.5
55.0	55.65	-1.410	26.289	32.783	26.397	1440.6
56.0	56.70	-1.411	26.305	32.805	26.415	1440.6
57.0	57.65	-1.409	26.324	32.828	26.434	1440.7
58.0	58.75	-1.407	26.338	32.846	26.448	1440.7
59.0	59.75	-1.404	26.357	32.867	26.465	1440.8
60.0	60.75	-1.401	26.374	32.888	26.482	1440.8
61.0	61.75	-1.401	26.389	32.908	26.498	1440.9
62.0	62.75	-1.399	26.403	32.923	26.511	1440.9

EXPERIMENT 2307

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
63.Ø	63.8Ø	-1.397	26.417	32.939	26.524	1441.Ø
64.Ø	64.75	-1.394	26.429	32.952	26.534	1441.Ø
65.Ø	65.85	-1.392	26.44Ø	32.965	26.545	1441.1
66.Ø	66.8Ø	-1.392	26.45Ø	32.977	26.555	1441.1
67.Ø	67.85	-1.39Ø	26.463	32.993	26.567	1441.1
68.Ø	68.9Ø	-1.39Ø	26.474	33.ØØ7	26.578	1441.2
69.Ø	69.85	-1.383	26.489	33.Ø2Ø	26.588	1441.2
7Ø.Ø	7Ø.9Ø	-1.38Ø	26.5Ø3	33.Ø35	26.6Ø1	1441.3
71.Ø	71.9Ø	-1.376	26.516	33.Ø48	26.611	1441.3
72.Ø	72.95	-1.373	26.529	33.Ø62	26.623	1441.4
73.Ø	73.9Ø	-1.369	26.542	33.Ø74	26.632	1441.5
74.Ø	75.ØØ	-1.367	26.554	33.Ø89	26.644	1441.5
75.Ø	75.95	-1.361	26.57Ø	33.1Ø3	26.655	1441.6
76.Ø	77.ØØ	-1.355	26.587	33.119	26.668	1441.6
77.Ø	77.95	-1.351	26.6Ø3	33.136	26.682	1441.7
78.Ø	79.Ø5	-1.346	26.618	33.15Ø	26.693	1441.8
79.Ø	8Ø.ØØ	-1.341	26.634	33.167	26.7Ø7	1441.8
8Ø.Ø	81.Ø5	-1.336	26.65Ø	33.182	26.719	1441.9
81.Ø	82.ØØ	-1.329	26.669	33.2Ø1	26.734	1442.Ø
82.Ø	83.Ø5	-1.328	26.683	33.217	26.747	1442.Ø
83.Ø	84.Ø5	-1.323	26.698	33.233	26.76Ø	1442.1
84.Ø	85.1Ø	-1.315	26.718	33.251	26.774	1442.1
85.Ø	86.1Ø	-1.3Ø8	26.739	33.271	26.79Ø	1442.2
86.Ø	87.15	-1.312	26.752	33.293	26.8Ø7	1442.2
87.Ø	88.1Ø	-1.31Ø	26.76Ø	33.3Ø1	26.814	1442.3
88.Ø	89.15	-1.296	26.788	33.322	26.831	1442.4
89.Ø	9Ø.15	-1.294	26.8Ø3	33.34Ø	26.846	1442.4
9Ø.Ø	91.2Ø	-1.275	26.828	33.353	26.856	1442.6
91.Ø	92.2Ø	-1.262	26.853	33.373	26.871	1442.7
92.Ø	93.2Ø	-1.282	26.856	33.398	26.892	1442.6
93.Ø	94.25	-1.29Ø	26.866	33.421	26.911	1442.6
94.Ø	95.25	-1.278	26.885	33.432	26.92Ø	1442.7
95.Ø	96.25	-1.278	26.9Ø6	33.46Ø	26.942	1442.8
96.Ø	97.25	-1.278	26.919	33.477	26.956	1442.8
97.Ø	98.3Ø	-1.272	26.939	33.498	26.972	1442.9
98.Ø	99.25	-1.234	26.975	33.5Ø5	26.977	1443.1
99.Ø	1ØØ.35	-1.231	26.994	33.526	26.994	1443.2
1ØØ.Ø	1Ø1.35	-1.216	27.Ø21	33.546	27.Ø1Ø	1443.3
1Ø1.Ø	1Ø2.35	-1.214	27.Ø4Ø	33.57Ø	27.Ø29	1443.3
1Ø2.Ø	1Ø3.35	-1.2Ø1	27.Ø63	33.586	27.Ø42	1443.4
1Ø3.Ø	1Ø4.35	-1.119	27.14Ø	33.599	27.Ø5Ø	1443.9
1Ø4.Ø	1Ø5.4Ø	-1.Ø8Ø	27.192	33.626	27.Ø71	1444.1
1Ø5.Ø	1Ø6.4Ø	-1.Ø59	27.228	33.652	27.Ø9Ø	1444.3
1Ø6.Ø	1Ø7.45	-1.Ø49	27.245	33.663	27.Ø99	1444.3
1Ø7.Ø	1Ø8.45	-1.Ø36	27.263	33.672	27.1Ø6	1444.4
1Ø8.Ø	1Ø9.45	-1.ØØ3	27.3ØØ	33.685	27.115	1444.6
1Ø9.Ø	11Ø.5Ø	-1.ØØ3	27.313	33.7Ø2	27.129	1444.7
11Ø.Ø	111.45	-.969	27.346	33.7Ø8	27.133	1444.8
111.Ø	112.55	-.961	27.372	33.734	27.154	1444.9
112.Ø	113.5Ø	-.945	27.396	33.748	27.164	1445.Ø
113.Ø	114.55	-.917	27.426	33.757	27.171	1445.2
114.Ø	115.55	-.9ØØ	27.45Ø	33.771	27.181	1445.3
115.Ø	116.6Ø	-.882	27.474	33.782	27.19Ø	1445.4
116.Ø	117.6Ø	-.867	27.497	33.796	27.2ØØ	1445.5
117.Ø	118.5Ø	-.858	27.512	33.8Ø6	27.2Ø9	1445.6
118.Ø	119.65	-.856	27.52Ø	33.813	27.214	1445.6
119.Ø	12Ø.5Ø	-.851	27.524	33.813	27.214	1445.7
12Ø.Ø	121.65	-.84Ø	27.543	33.826	27.224	1445.8
121.Ø	122.65	-.833	27.558	33.837	27.233	1445.8
122.Ø	123.7Ø	-.828	27.564	33.84Ø	27.235	1445.9
123.Ø	124.7Ø	-.821	27.576	33.847	27.24Ø	1445.9
124.Ø	125.75	-.81Ø	27.591	33.855	27.246	1446.Ø
125.Ø	126.7Ø	-.796	27.613	33.868	27.257	1446.1
126.Ø	127.75	-.787	27.629	33.88Ø	27.266	1446.2
127.Ø	128.7Ø	-.781	27.64Ø	33.887	27.271	1446.2
128.Ø	129.8Ø	-.775	27.648	33.891	27.274	1446.3
129.Ø	13Ø.75	-.758	27.671	33.9Ø2	27.283	1446.4

EXPERIMENT 2307

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
130.Ø	131.85	-.745	27.692	33.915	27.292	1446.5
131.Ø	132.75	-.736	27.714	33.934	27.3Ø7	1446.6
132.Ø	133.9Ø	-.731	27.723	33.941	27.312	1446.6
133.Ø	134.85	-.721	27.736	33.946	27.316	1446.7
134.Ø	135.9Ø	-.711	27.754	33.959	27.326	1446.8
135.Ø	136.9Ø	-.7Ø3	27.767	33.967	27.332	1446.9
136.Ø	137.95	-.696	27.778	33.973	27.338	1446.9
137.Ø	138.9Ø	-.692	27.787	33.981	27.343	1447.Ø
138.Ø	139.95	-.688	27.795	33.986	27.347	1447.Ø
139.Ø	14Ø.95	-.685	27.799	33.988	27.349	1447.Ø
14Ø.Ø	141.95	-.682	27.8Ø6	33.993	27.353	1447.1
141.Ø	143.Ø5	-.678	27.814	33.998	27.357	1447.1
142.Ø	144.ØØ	-.67Ø	27.825	34.ØØ5	27.362	1447.2
143.Ø	145.Ø5	-.665	27.834	34.ØØ9	27.365	1447.2
144.Ø	146.Ø5	-.66Ø	27.843	34.Ø15	27.37Ø	1447.3
145.Ø	147.1Ø	-.654	27.852	34.Ø21	27.374	1447.3
146.Ø	148.1Ø	-.651	27.86Ø	34.Ø28	27.38Ø	1447.4
147.Ø	149.1Ø	-.646	27.869	34.Ø33	27.384	1447.4
148.Ø	15Ø.15	-.642	27.878	34.Ø4Ø	27.389	1447.5
149.Ø	151.1Ø	-.637	27.885	34.Ø43	27.392	1447.5
15Ø.Ø	152.2Ø	-.624	27.9Ø3	34.Ø53	27.399	1447.6
151.Ø	153.1Ø	-.62Ø	27.911	34.Ø59	27.4Ø4	1447.6
152.Ø	154.15	-.614	27.92Ø	34.Ø63	27.4Ø7	1447.7
153.Ø	155.15	-.6Ø8	27.932	34.Ø72	27.414	1447.7
154.Ø	156.2Ø	-.598	27.946	34.Ø8Ø	27.42Ø	1447.8
155.Ø	157.15	-.595	27.954	34.Ø86	27.424	1447.9
156.Ø	158.3Ø	-.591	27.96Ø	34.Ø9Ø	27.427	1447.9
157.Ø	159.2Ø	-.586	27.968	34.Ø94	27.431	1447.9
158.Ø	16Ø.3Ø	-.574	27.983	34.1ØØ	27.435	1448.Ø
159.Ø	161.25	-.565	28.ØØØ	34.112	27.444	1448.1
16Ø.Ø	162.35	-.555	28.Ø18	34.124	27.453	1448.2
161.Ø	163.3Ø	-.546	28.Ø33	34.134	27.461	1448.2
162.Ø	164.35	-.538	28.Ø46	34.142	27.468	1448.3
163.Ø	165.3Ø	-.527	28.Ø62	34.151	27.474	1448.4
164.Ø	166.35	-.519	28.Ø77	34.161	27.482	1448.5
165.Ø	167.35	-.516	28.Ø84	34.167	27.487	1448.5
166.Ø	168.35	-.512	28.Ø9Ø	34.17Ø	27.489	1448.5
167.Ø	169.45	-.5Ø5	28.1Ø1	34.176	27.493	1448.6
168.Ø	17Ø.4Ø	-.498	28.112	34.182	27.498	1448.7
169.Ø	171.45	-.494	28.12Ø	34.187	27.5Ø2	1448.7
17Ø.Ø	172.45	-.489	28.13Ø	34.195	27.5Ø8	1448.7
171.Ø	173.5Ø	-.482	28.143	34.2Ø4	27.515	1448.8
172.Ø	174.45	-.472	28.156	34.21Ø	27.519	1448.9
173.Ø	175.55	-.464	28.17Ø	34.219	27.526	1448.9
174.Ø	176.45	-.458	28.181	34.227	27.532	1449.Ø
175.Ø	177.6Ø	-.452	28.192	34.234	27.538	1449.1
176.Ø	178.55	-.447	28.2Ø1	34.24Ø	27.542	1449.1
177.Ø	179.6Ø	-.445	28.2Ø6	34.243	27.545	1449.1
178.Ø	18Ø.6Ø	-.438	28.216	34.248	27.549	1449.2
179.Ø	181.65	-.432	28.23Ø	34.26Ø	27.558	1449.3
18Ø.Ø	182.55	-.428	28.236	34.263	27.561	1449.3


EXPERIMENT 2308
TEMPERATURE. C
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00
SALINITY O/OO
14.00
18.00
22.00
26.00
30.00
34.00
38.00
SIGMAT
12.00
16.00
20.00
24.00
28.00
32.00
36.00
DEPTH M
1
10
100
1000
+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN7 EXPERIMENT 2308

LAT.N. 80-35-20 LONG.W. 78-53-50 DATE 032477 G.M.T. 1843

ICE THICKNESS 1.15 M DEPTH INCR 1.00 WATER DEPTH 369 M

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
1.0	.90	-.987	14.803	17.280	13.881	1420.3
2.0	2.00	-.949	16.048	18.842	15.138	1422.6
3.0	2.90	-.369	22.015	26.096	20.976	1435.3
4.0	4.00	-.153	25.033	29.830	23.976	1441.5
5.0	5.00	-.257	25.539	30.596	24.597	1442.1
6.0	6.00	-.406	25.590	30.813	24.776	1441.7
7.0	7.00	-.510	25.582	30.908	24.856	1441.4
8.0	8.00	-.617	25.559	30.986	24.923	1441.0
9.0	9.00	-.731	25.512	31.038	24.968	1440.5
10.0	10.05	-.819	25.481	31.087	25.010	1440.2
11.0	11.00	-.908	25.488	31.187	25.093	1439.9
12.0	11.95	-.992	25.527	31.326	25.208	1439.8
13.0	13.00	-1.055	25.567	31.444	25.305	1439.6
14.0	14.05	-1.118	25.586	31.535	25.380	1439.5
15.0	14.95	-1.183	25.581	31.596	25.431	1439.3
16.0	16.00	-1.249	25.566	31.645	25.472	1439.1
17.0	17.00	-1.271	25.569	31.671	25.494	1439.0
18.0	18.00	-1.311	25.569	31.712	25.528	1438.9
19.0	19.00	-1.334	25.577	31.748	25.558	1438.9
20.0	20.00	-1.348	25.575	31.759	25.567	1438.8
21.0	21.10	-1.367	25.572	31.775	25.580	1438.8
22.0	22.00	-1.373	25.581	31.793	25.595	1438.8
23.0	23.00	-1.369	25.595	31.807	25.606	1438.8
24.0	24.10	-1.378	25.605	31.830	25.625	1438.8
25.0	25.10	-1.378	25.613	31.840	25.633	1438.9
26.0	26.15	-1.372	25.634	31.861	25.650	1439.0
27.0	27.15	-1.378	25.644	31.881	25.666	1439.0
28.0	28.20	-1.358	25.670	31.894	25.676	1439.1
29.0	29.25	-1.350	25.690	31.913	25.691	1439.2
30.0	30.25	-1.324	25.728	31.936	25.710	1439.4
31.0	31.30	-1.300	25.767	31.964	25.732	1439.5
32.0	32.30	-1.280	25.804	31.993	25.754	1439.7
33.0	33.30	-1.264	25.836	32.019	25.775	1439.8
34.0	34.30	-1.249	25.869	32.047	25.798	1439.9
35.0	35.30	-1.239	25.901	32.080	25.824	1440.0
36.0	36.35	-1.238	25.935	32.124	25.859	1440.1
37.0	37.40	-1.247	25.961	32.168	25.895	1440.2
38.0	38.40	-1.255	25.990	32.216	25.934	1440.2
39.0	39.40	-1.270	26.008	32.256	25.968	1440.2
40.0	40.40	-1.287	26.024	32.296	26.000	1440.2
41.0	41.45	-1.303	26.048	32.346	26.041	1440.2
42.0	42.40	-1.315	26.065	32.381	26.069	1440.2
43.0	43.45	-1.333	26.078	32.417	26.099	1440.2
44.0	44.45	-1.349	26.096	32.458	26.133	1440.2
45.0	45.50	-1.362	26.108	32.489	26.158	1440.2
46.0	46.50	-1.370	26.118	32.510	26.176	1440.2
47.0	47.50	-1.377	26.136	32.542	26.202	1440.2
48.0	48.50	-1.379	26.154	32.568	26.223	1440.3
49.0	49.60	-1.387	26.167	32.594	26.244	1440.3
50.0	50.50	-1.393	26.185	32.624	26.268	1440.3
51.0	51.65	-1.397	26.198	32.647	26.287	1440.4
52.0	52.55	-1.400	26.210	32.665	26.302	1440.4
53.0	53.60	-1.402	26.223	32.684	26.317	1440.4
54.0	54.60	-1.404	26.237	32.706	26.335	1440.5
55.0	55.65	-1.406	26.253	32.729	26.353	1440.5
56.0	56.65	-1.409	26.267	32.751	26.371	1440.5
57.0	57.65	-1.410	26.281	32.771	26.388	1440.6
58.0	58.65	-1.415	26.293	32.792	26.405	1440.6
59.0	59.70	-1.412	26.308	32.809	26.418	1440.6
60.0	60.70	-1.410	26.322	32.826	26.432	1440.7
61.0	61.70	-1.410	26.340	32.850	26.452	1440.7
62.0	62.70	-1.409	26.355	32.869	26.467	1440.8

EXPERIMENT 2308

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
63.Ø	63.75	-1.4Ø8	26.369	32.886	26.481	144Ø.8
64.Ø	64.8Ø	-1.4Ø8	26.385	32.9Ø8	26.499	144Ø.9
65.Ø	65.75	-1.415	26.394	32.926	26.514	144Ø.9
66.Ø	66.85	-1.4Ø7	26.414	32.945	26.529	1441.Ø
67.Ø	67.75	-1.4Ø4	26.431	32.964	26.544	1441.Ø
68.Ø	68.85	-1.4Ø2	26.446	32.982	26.558	1441.1
69.Ø	69.15	-1.399	26.459	32.996	26.57Ø	1441.1
7Ø.Ø	7Ø.35	-1.386	26.488	33.Ø21	26.59Ø	1441.2
71.Ø	71.6Ø	-1.386	26.499	33.Ø36	26.6Ø2	1441.3
72.Ø	72.6Ø	-1.4Ø9	26.495	33.Ø55	26.618	1441.2
73.Ø	73.8Ø	-1.459	26.481	33.Ø9Ø	26.647	1441.Ø
74.Ø	74.7Ø	-1.539	26.413	33.Ø85	26.645	144Ø.7
75.Ø	75.75	-1.455	26.476	33.Ø78	26.638	1441.1
76.Ø	76.8Ø	-1.384	26.549	33.Ø99	26.653	1441.5
77.Ø	77.85	-1.371	26.577	33.123	26.672	1441.6
78.Ø	78.95	-1.368	26.592	33.14Ø	26.685	1441.6
79.Ø	8Ø.ØØ	-1.362	26.6Ø8	33.154	26.697	1441.7
8Ø.Ø	81.ØØ	-1.356	26.628	33.175	26.713	1441.8
81.Ø	82.Ø5	-1.351	26.644	33.191	26.726	1441.8
82.Ø	83.ØØ	-1.338	26.669	33.2Ø9	26.741	1441.9
83.Ø	84.1Ø	-1.33Ø	26.692	33.231	26.759	1442.Ø
84.Ø	85.1Ø	-1.324	26.7Ø9	33.248	26.771	1442.1
85.Ø	86.Ø5	-1.324	26.722	33.265	26.785	1442.1
86.Ø	87.15	-1.318	26.738	33.279	26.797	1442.2
87.Ø	88.1Ø	-1.313	26.752	33.293	26.8Ø8	1442.3
88.Ø	89.1Ø	-1.3Ø8	26.77Ø	33.311	26.822	1442.3
89.Ø	9Ø.2Ø	-1.3Ø7	26.788	33.334	26.841	1442.4
9Ø.Ø	91.1Ø	-1.3Ø2	26.8Ø4	33.351	26.854	1442.4
91.Ø	92.15	-1.297	26.819	33.365	26.866	1442.5
92.Ø	93.2Ø	-1.298	26.834	33.386	26.883	1442.5
93.Ø	94.2Ø	-1.31Ø	26.842	33.4Ø9	26.9Ø2	1442.5
94.Ø	95.25	-1.323	26.845	33.427	26.917	1442.5
95.Ø	96.2Ø	-1.336	26.849	33.446	26.933	1442.5
96.Ø	97.25	-1.334	26.86Ø	33.459	26.943	1442.5
97.Ø	98.25	-1.335	26.871	33.475	26.956	1442.6
98.Ø	99.3Ø	-1.344	26.876	33.492	26.97Ø	1442.6
99.Ø	1ØØ.3Ø	-1.341	26.89Ø	33.5Ø6	26.981	1442.6
1ØØ.Ø	1Ø1.3Ø	-1.328	26.91Ø	33.518	26.991	1442.7
1Ø1.Ø	1Ø2.35	-1.315	26.931	33.532	27.ØØ2	1442.8
1Ø2.Ø	1Ø3.35	-1.3Ø1	26.954	33.547	27.Ø14	1442.9
1Ø3.Ø	1Ø4.4Ø	-1.294	26.972	33.565	27.Ø27	1443.Ø
1Ø4.Ø	1Ø5.35	-1.277	26.996	33.578	27.Ø38	1443.1
1Ø5.Ø	1Ø6.4Ø	-1.24Ø	27.Ø41	33.597	27.Ø52	1443.3
1Ø6.Ø	1Ø7.35	-1.221	27.Ø71	33.616	27.Ø67	1443.5
1Ø7.Ø	1Ø8.45	-1.198	27.Ø97	33.627	27.Ø74	1443.6
1Ø8.Ø	1Ø9.4Ø	-1.18Ø	27.124	33.643	27.Ø87	1443.7
1Ø9.Ø	11Ø.45	-1.153	27.159	33.66Ø	27.1ØØ	1443.9
11Ø.Ø	111.45	-1.123	27.198	33.678	27.114	1444.1
111.Ø	112.45	-1.Ø94	27.234	33.695	27.126	1444.2
112.Ø	113.55	-1.Ø7Ø	27.263	33.7Ø6	27.135	1444.4
113.Ø	114.45	-1.Ø42	27.294	33.718	27.143	1444.6
114.Ø	115.55	-1.Ø16	27.325	33.73Ø	27.152	1444.7
115.Ø	116.55	-.991	27.358	33.747	27.165	1444.9
116.Ø	117.6Ø	-.973	27.38Ø	33.755	27.172	1445.Ø
117.Ø	118.55	-.953	27.4Ø6	33.768	27.181	1445.1
118.Ø	119.55	-.936	27.429	33.779	27.189	1445.2
119.Ø	12Ø.6Ø	-.9Ø5	27.464	33.792	27.199	1445.4
12Ø.Ø	121.6Ø	-.886	27.494	33.811	27.213	1445.5
121.Ø	122.65	-.875	27.5Ø9	33.818	27.218	1445.6
122.Ø	123.65	-.862	27.529	33.83Ø	27.228	1445.7
123.Ø	124.7Ø	-.847	27.546	33.836	27.232	1445.8
124.Ø	125.65	-.833	27.568	33.85Ø	27.243	1445.9
125.Ø	126.7Ø	-.82Ø	27.585	33.857	27.249	1446.Ø
126.Ø	127.7Ø	-.811	27.6ØØ	33.867	27.256	1446.1
127.Ø	128.8Ø	-.8Ø2	27.613	33.875	27.262	1446.1
128.Ø	129.7Ø	-.793	27.628	33.883	27.268	1446.2
129.Ø	13Ø.8Ø	-.778	27.648	33.893	27.276	1446.3

EXPERIMENT 2308

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
13Ø.Ø	131.75	-.767	27.665	33.9Ø4	27.284	1446.4
131.Ø	132.85	-.76Ø	27.678	33.913	27.291	1446.4
132.Ø	133.8Ø	-.752	27.69Ø	33.919	27.296	1446.5
133.Ø	134.9Ø	-.744	27.7Ø3	33.928	27.3Ø3	1446.6
134.Ø	135.85	-.737	27.712	33.932	27.3Ø5	1446.6
135.Ø	136.9Ø	-.73Ø	27.726	33.941	27.313	1446.7
136.Ø	137.9Ø	-.723	27.737	33.948	27.318	1446.8
137.Ø	138.9Ø	-.718	27.746	33.955	27.323	1446.8
138.Ø	14Ø.ØØ	-.712	27.755	33.959	27.327	1446.9
139.Ø	14Ø.95	-.7Ø8	27.764	33.966	27.332	1446.9
14Ø.Ø	142.ØØ	-.7Ø2	27.774	33.972	27.336	1446.9
141.Ø	142.95	-.698	27.782	33.978	27.342	1447.Ø
142.Ø	144.Ø5	-.692	27.79Ø	33.982	27.344	1447.Ø
143.Ø	145.ØØ	-.689	27.798	33.988	27.349	1447.1
144.Ø	146.Ø5	-.684	27.8Ø5	33.992	27.352	1447.1
145.Ø	147.1Ø	-.68Ø	27.812	33.996	27.355	1447.2
146.Ø	148.Ø5	-.677	27.82Ø	34.ØØ2	27.36Ø	1447.2
147.Ø	149.Ø5	-.672	27.827	34.ØØ6	27.363	1447.3
148.Ø	15Ø.1Ø	-.668	27.835	34.Ø12	27.367	1447.3
149.Ø	151.1Ø	-.662	27.844	34.Ø16	27.37Ø	1447.3
15Ø.Ø	152.1Ø	-.656	27.854	34.Ø23	27.376	1447.4
151.Ø	153.15	-.652	27.861	34.Ø27	27.379	1447.4
152.Ø	154.15	-.649	27.865	34.Ø28	27.38Ø	1447.5
153.Ø	155.15	-.642	27.876	34.Ø34	27.385	1447.5
154.Ø	156.25	-.637	27.885	34.Ø41	27.39Ø	1447.6
155.Ø	157.2Ø	-.631	27.896	34.Ø48	27.395	1447.6
156.Ø	158.2Ø	-.628	27.9Ø3	34.Ø54	27.4ØØ	1447.7
157.Ø	159.25	-.624	27.9Ø9	34.Ø56	27.4Ø2	1447.7
158.Ø	16Ø.3Ø	-.618	27.919	34.Ø62	27.4Ø6	1447.8
159.Ø	161.25	-.6Ø9	27.932	34.Ø7Ø	27.412	1447.8
16Ø.Ø	162.35	-.6Ø7	27.938	34.Ø75	27.416	1447.9
161.Ø	163.3Ø	-.6Ø1	27.945	34.Ø77	27.417	1447.9
162.Ø	164.4Ø	-.595	27.957	34.Ø86	27.424	1448.Ø
163.Ø	165.35	-.588	27.967	34.Ø91	27.428	1448.Ø
164.Ø	166.35	-.586	27.974	34.Ø97	27.433	1448.1
165.Ø	167.4Ø	-.582	27.979	34.Ø99	27.434	1448.1
166.Ø	168.35	-.576	27.988	34.1Ø4	27.439	1448.2
167.Ø	169.45	-.568	28.ØØØ	34.111	27.443	1448.2
168.Ø	17Ø.45	-.56Ø	28.Ø13	34.119	27.45Ø	1448.3
169.Ø	171.45	-.552	28.Ø26	34.126	27.455	1448.3
17Ø.Ø	172.5Ø	-.544	28.Ø4Ø	34.136	27.462	1448.4
171.Ø	173.5Ø	-.535	28.Ø56	34.146	27.47Ø	1448.5
172.Ø	174.6Ø	-.522	28.Ø73	34.155	27.477	1448.6
173.Ø	175.55	-.5Ø7	28.Ø98	34.17Ø	27.489	1448.7
174.Ø	176.6Ø	-.489	28.125	34.186	27.5Ø1	1448.8
175.Ø	177.55	-.471	28.154	34.2Ø4	27.514	1448.9
176.Ø	178.65	-.452	28.185	34.223	27.529	1449.1
177.Ø	179.6Ø	-.434	28.212	34.239	27.541	1449.2
178.Ø	18Ø.65	-.418	28.24Ø	34.258	27.556	1449.3
179.Ø	181.6Ø	-.4Ø4	28.263	34.273	27.567	1449.4
18Ø.Ø	182.7Ø	-.389	28.286	34.285	27.577	1449.5
181.Ø	183.7Ø	-.379	28.3Ø3	34.297	27.586	1449.6
182.Ø	184.7Ø	-.368	28.321	34.3Ø7	27.594	1449.7
183.Ø	185.7Ø	-.355	28.34Ø	34.318	27.6Ø1	1449.8
184.Ø	186.75	-.34Ø	28.361	34.329	27.6Ø9	1449.9
185.Ø	187.7Ø	-.326	28.384	34.344	27.621	145Ø.Ø
186.Ø	188.75	-.313	28.4Ø4	34.355	27.63Ø	145Ø.1
187.Ø	189.8Ø	-.299	28.427	34.369	27.64Ø	145Ø.2
188.Ø	19Ø.8Ø	-.289	28.447	34.384	27.652	145Ø.2
189.Ø	191.8Ø	-.28Ø	28.461	34.391	27.657	145Ø.3
19Ø.Ø	192.8Ø	-.265	28.486	34.4Ø8	27.67Ø	145Ø.4
191.Ø	193.85	-.251	28.5Ø7	34.42Ø	27.679	145Ø.5
192.Ø	194.8Ø	-.237	28.53Ø	34.434	27.69Ø	145Ø.6
193.Ø	195.9Ø	-.227	28.55Ø	34.449	27.7Ø1	145Ø.7
194.Ø	196.85	-.212	28.571	34.46Ø	27.7Ø9	145Ø.8
195.Ø	197.95	-.2Ø1	28.588	34.469	27.716	145Ø.9
196.Ø	199.ØØ	-.19Ø	28.6Ø8	34.482	27.726	1451.Ø

EXPERIMENT 2308

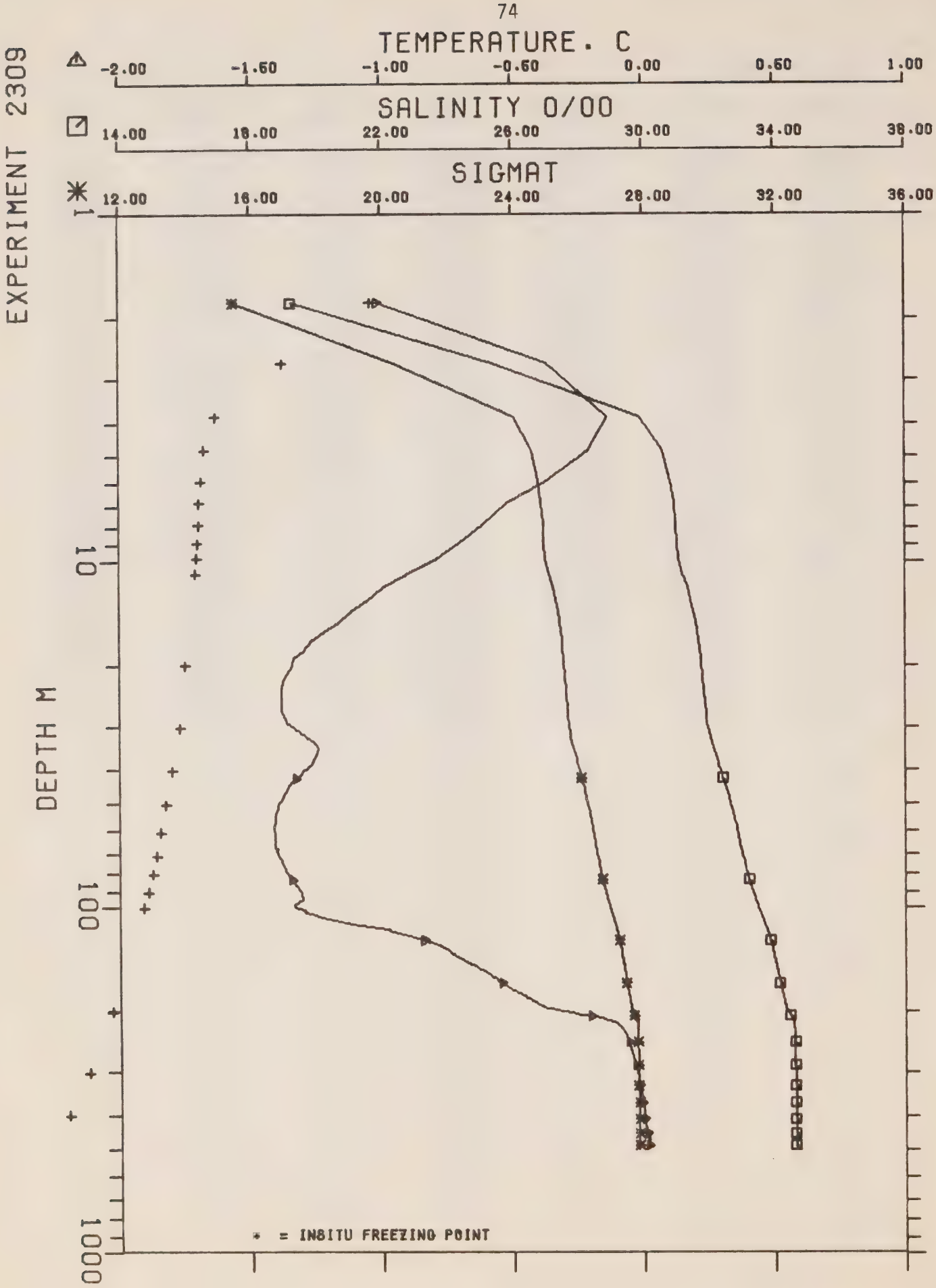
DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
197.Ø	199.9Ø	-.181	28.619	34.486	27.729	1451.Ø
198.Ø	2ØØ.95	-.176	28.629	34.493	27.735	1451.1
199.Ø	2Ø2.Ø5	-.171	28.638	34.499	27.739	1451.1
2ØØ.Ø	2Ø2.95	-.165	28.646	34.5Ø3	27.742	1451.2
2Ø1.Ø	2Ø4.Ø5	-.161	28.654	34.5Ø8	27.746	1451.2
2Ø2.Ø	2Ø5.Ø5	-.153	28.664	34.512	27.748	1451.3
2Ø3.Ø	2Ø6.1Ø	-.145	28.678	34.521	27.756	1451.3
2Ø4.Ø	2Ø7.1Ø	-.136	28.692	34.529	27.761	1451.4
2Ø5.Ø	2Ø8.1Ø	-.126	28.7Ø7	34.536	27.767	1451.5
2Ø6.Ø	2Ø9.15	-.119	28.718	34.543	27.772	1451.5
2Ø7.Ø	21Ø.15	-.115	28.723	34.545	27.773	1451.6
2Ø8.Ø	211.15	-.113	28.729	34.549	27.777	1451.6
2Ø9.Ø	212.2Ø	-.1Ø9	28.735	34.552	27.779	1451.6
21Ø.Ø	213.25	-.1Ø7	28.74Ø	34.556	27.782	1451.7
211.Ø	214.2Ø	-.1Ø3	28.745	34.558	27.783	1451.7
212.Ø	215.25	-.1ØØ	28.751	34.561	27.786	1451.8
213.Ø	216.3Ø	-.Ø96	28.756	34.563	27.787	1451.8
214.Ø	217.25	-.Ø92	28.761	34.565	27.789	1451.8
215.Ø	218.35	-.Ø88	28.768	34.569	27.792	1451.9
216.Ø	219.3Ø	-.Ø87	28.771	34.572	27.794	1451.9
217.Ø	22Ø.35	-.Ø85	28.775	34.574	27.795	1451.9
218.Ø	221.3Ø	-.Ø82	28.779	34.575	27.796	1452.Ø
219.Ø	222.4Ø	-.Ø81	28.782	34.577	27.798	1452.Ø
22Ø.Ø	223.4Ø	-.Ø8Ø	28.784	34.579	27.799	1452.Ø
221.Ø	224.45	-.Ø79	28.786	34.58Ø	27.8ØØ	1452.Ø
222.Ø	225.4Ø	-.Ø75	28.791	34.58Ø	27.8ØØ	1452.1
223.Ø	226.45	-.Ø74	28.794	34.583	27.8Ø2	1452.1
224.Ø	227.5Ø	-.Ø72	28.797	34.584	27.8Ø2	1452.1
225.Ø	228.5Ø	-.Ø69	28.8Ø1	34.585	27.8Ø4	1452.1
226.Ø	229.5Ø	-.Ø68	28.8Ø3	34.587	27.8Ø5	1452.2
227.Ø	23Ø.45	-.Ø67	28.8Ø6	34.588	27.8Ø6	1452.2
228.Ø	231.55	-.Ø66	28.8Ø8	34.589	27.8Ø7	1452.2
229.Ø	232.5Ø	-.Ø65	28.81Ø	34.591	27.8Ø8	1452.2
23Ø.Ø	233.6Ø	-.Ø64	28.812	34.591	27.8Ø8	1452.3
231.Ø	234.6Ø	-.Ø62	28.813	34.591	27.8Ø8	1452.3
232.Ø	235.6Ø	-.Ø62	28.815	34.593	27.8Ø9	1452.3
233.Ø	236.65	-.Ø62	28.816	34.593	27.81Ø	1452.3
234.Ø	237.6Ø	-.Ø61	28.819	34.595	27.811	1452.3
235.Ø	238.65	-.Ø59	28.821	34.594	27.811	1452.4
236.Ø	239.6Ø	-.Ø59	28.822	34.596	27.812	1452.4
237.Ø	24Ø.7Ø	-.Ø59	28.823	34.596	27.812	1452.4
238.Ø	241.7Ø	-.Ø58	28.825	34.597	27.812	1452.4
239.Ø	242.7Ø	-.Ø57	28.826	34.597	27.812	1452.4
24Ø.Ø	243.8Ø	-.Ø55	28.828	34.597	27.813	1452.5
241.Ø	244.75	-.Ø55	28.83Ø	34.599	27.814	1452.5
242.Ø	245.8Ø	-.Ø55	28.831	34.6ØØ	27.815	1452.5
243.Ø	246.8Ø	-.Ø54	28.832	34.599	27.814	1452.5
244.Ø	247.75	-.Ø54	28.833	34.6ØØ	27.815	1452.6
245.Ø	248.9Ø	-.Ø54	28.835	34.6Ø1	27.816	1452.6
246.Ø	249.85	-.Ø52	28.837	34.6Ø1	27.816	1452.6
247.Ø	25Ø.85	-.Ø52	28.839	34.6Ø4	27.818	1452.6
248.Ø	252.ØØ	-.Ø51	28.84Ø	34.6Ø3	27.817	1452.6
249.Ø	252.9Ø	-.Ø5Ø	28.842	34.6Ø4	27.817	1452.7
25Ø.Ø	253.95	-.Ø5Ø	28.842	34.6Ø4	27.818	1452.7
251.Ø	255.ØØ	-.Ø49	28.843	34.6Ø4	27.818	1452.7
252.Ø	255.95	-.Ø49	28.845	34.6Ø6	27.819	1452.7
253.Ø	257.ØØ	-.Ø48	28.847	34.6Ø6	27.819	1452.7
254.Ø	258.ØØ	-.Ø47	28.849	34.6Ø7	27.82Ø	1452.8
255.Ø	259.Ø5	-.Ø45	28.851	34.6Ø7	27.82Ø	1452.8
256.Ø	26Ø.15	-.Ø45	28.852	34.6Ø7	27.82Ø	1452.8
257.Ø	261.1Ø	-.Ø44	28.854	34.6Ø8	27.821	1452.8
258.Ø	262.15	-.Ø43	28.856	34.6Ø9	27.821	1452.8
259.Ø	263.15	-.Ø43	28.856	34.6Ø9	27.822	1452.9
26Ø.Ø	264.1Ø	-.Ø42	28.858	34.6Ø9	27.822	1452.9
261.Ø	265.15	-.Ø41	28.859	34.6Ø9	27.822	1452.9
262.Ø	266.2Ø	-.Ø41	28.86Ø	34.611	27.823	1452.9
263.Ø	267.2Ø	-.Ø4Ø	28.861	34.61Ø	27.822	1452.9

EXPERIMENT 2308

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
264.Ø	268.25	-.ØØØ	28.863	34.612	27.824	1453.Ø
265.Ø	269.2Ø	-.Ø39	28.864	34.612	27.824	1453.Ø
266.Ø	27Ø.25	-.Ø38	28.866	34.612	27.824	1453.Ø
267.Ø	271.25	-.Ø37	28.867	34.612	27.824	1453.Ø
268.Ø	272.3Ø	-.Ø36	28.869	34.613	27.824	1453.1
269.Ø	273.25	-.Ø37	28.87Ø	34.614	27.826	1453.1
27Ø.Ø	274.3Ø	-.Ø36	28.871	34.615	27.826	1453.1
271.Ø	275.35	-.Ø35	28.872	34.613	27.825	1453.1
272.Ø	276.3Ø	-.Ø36	28.873	34.616	27.827	1453.1
273.Ø	277.35	-.Ø35	28.873	34.614	27.825	1453.1
274.Ø	278.35	-.Ø35	28.874	34.616	27.826	1453.2
275.Ø	279.4Ø	-.Ø34	28.875	34.615	27.826	1453.2
276.Ø	28Ø.4Ø	-.Ø35	28.877	34.618	27.828	1453.2
277.Ø	281.45	-.Ø33	28.878	34.616	27.827	1453.2
278.Ø	282.4Ø	-.Ø32	28.879	34.616	27.827	1453.2
279.Ø	283.5Ø	-.Ø31	28.88Ø	34.616	27.826	1453.3
28Ø.Ø	284.4Ø	-.Ø31	28.882	34.617	27.828	1453.3
281.Ø	285.5Ø	-.Ø31	28.882	34.617	27.828	1453.3
282.Ø	286.5Ø	-.Ø31	28.883	34.618	27.828	1453.3
283.Ø	287.55	-.Ø3Ø	28.885	34.618	27.828	1453.3
284.Ø	288.6Ø	-.Ø29	28.886	34.618	27.828	1453.4
285.Ø	289.6Ø	-.Ø28	28.887	34.618	27.828	1453.4
286.Ø	29Ø.65	-.Ø29	28.888	34.619	27.829	1453.4
287.Ø	291.6Ø	-.Ø28	28.888	34.618	27.828	1453.4
288.Ø	292.7Ø	-.Ø28	28.889	34.619	27.829	1453.4
289.Ø	293.65	-.Ø28	28.89Ø	34.619	27.829	1453.4
29Ø.Ø	294.7Ø	-.Ø28	28.891	34.619	27.829	1453.5
291.Ø	295.75	-.Ø27	28.892	34.62Ø	27.829	1453.5
292.Ø	296.65	-.Ø27	28.893	34.62Ø	27.83Ø	1453.5
293.Ø	297.75	-.Ø25	28.894	34.619	27.828	1453.5
294.Ø	298.8Ø	-.Ø26	28.894	34.62Ø	27.829	1453.5
295.Ø	299.8Ø	-.Ø26	28.895	34.62Ø	27.83Ø	1453.6
296.Ø	3ØØ.9Ø	-.Ø25	28.896	34.62Ø	27.83Ø	1453.6
297.Ø	3Ø1.8Ø	-.Ø26	28.897	34.621	27.831	1453.6
298.Ø	3Ø2.9Ø	-.Ø24	28.898	34.62Ø	27.83Ø	1453.6
299.Ø	3Ø3.9Ø	-.Ø24	28.9ØØ	34.622	27.831	1453.6
3ØØ.Ø	3Ø4.9Ø	-.Ø23	28.9Ø1	34.622	27.831	1453.7
3Ø1.Ø	3Ø5.95	-.Ø23	28.9Ø2	34.622	27.831	1453.7
3Ø2.Ø	3Ø6.95	-.Ø22	28.9Ø3	34.622	27.831	1453.7
3Ø3.Ø	3Ø7.95	-.Ø21	28.9Ø4	34.622	27.831	1453.7
3Ø4.Ø	3Ø9.ØØ	-.Ø21	28.9Ø5	34.623	27.831	1453.7
3Ø5.Ø	31Ø.ØØ	-.Ø19	28.9Ø7	34.622	27.831	1453.8
3Ø6.Ø	311.ØØ	-.Ø19	28.9Ø8	34.623	27.832	1453.8
3Ø7.Ø	312.ØØ	-.Ø18	28.9Ø9	34.623	27.832	1453.8
3Ø8.Ø	313.Ø5	-.Ø18	28.91Ø	34.624	27.832	1453.8
3Ø9.Ø	314.Ø5	-.Ø17	28.911	34.623	27.832	1453.8
31Ø.Ø	315.Ø5	-.Ø18	28.911	34.624	27.832	1453.9
311.Ø	316.Ø5	-.Ø18	28.912	34.625	27.833	1453.9
312.Ø	317.1Ø	-.Ø18	28.913	34.625	27.833	1453.9
313.Ø	318.15	-.Ø17	28.914	34.624	27.833	1453.9
314.Ø	319.1Ø	-.Ø17	28.914	34.624	27.833	1453.9
315.Ø	32Ø.2Ø	-.Ø16	28.916	34.625	27.833	1453.9
316.Ø	321.15	-.Ø15	28.917	34.625	27.833	1454.Ø
317.Ø	322.25	-.Ø14	28.918	34.624	27.832	1454.Ø
318.Ø	323.2Ø	-.Ø15	28.919	34.626	27.833	1454.Ø
319.Ø	324.25	-.Ø14	28.92Ø	34.625	27.833	1454.Ø
32Ø.Ø	325.25	-.Ø15	28.92Ø	34.626	27.834	1454.Ø
321.Ø	326.3Ø	-.Ø14	28.921	34.625	27.833	1454.1
322.Ø	327.3Ø	-.Ø14	28.921	34.625	27.833	1454.1
323.Ø	328.35	-.Ø14	28.922	34.626	27.834	1454.1
324.Ø	329.3Ø	-.Ø13	28.923	34.626	27.833	1454.1
325.Ø	33Ø.45	-.Ø13	28.924	34.626	27.833	1454.1
326.Ø	331.35	-.Ø12	28.924	34.625	27.832	1454.1
327.Ø	332.45	-.Ø12	28.925	34.625	27.832	1454.2
328.Ø	333.45	-.Ø13	28.926	34.627	27.835	1454.2
329.Ø	334.45	-.Ø12	28.927	34.626	27.834	1454.2
33Ø.Ø	335.45	-.Ø12	28.927	34.626	27.834	1454.2

EXPERIMENT 2308

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
331.Ø	336.45	-.Ø12	28.928	34.627	27.834	1454.2
332.Ø	337.55	-.Ø11	28.929	34.626	27.834	1454.3
333.Ø	338.5Ø	-.Ø11	28.93Ø	34.627	27.834	1454.3
334.Ø	339.6Ø	-.Ø11	28.93Ø	34.627	27.834	1454.3
335.Ø	34Ø.55	-.Ø1Ø	28.931	34.627	27.834	1454.3
336.Ø	341.65	-.Ø1Ø	28.932	34.627	27.834	1454.3
337.Ø	342.6Ø	-.Ø1Ø	28.933	34.627	27.835	1454.3
338.Ø	343.65	-.Ø1Ø	28.933	34.627	27.835	1454.4
339.Ø	344.65	-.Ø1Ø	28.934	34.628	27.835	1454.4
34Ø.Ø	345.65	-.Ø1Ø	28.934	34.628	27.835	1454.4
341.Ø	346.7Ø	-.ØØ9	28.935	34.627	27.834	1454.4
342.Ø	347.7Ø	-.Ø1Ø	28.936	34.629	27.836	1454.4
343.Ø	348.75	-.ØØ9	28.937	34.628	27.835	1454.5
344.Ø	349.7Ø	-.ØØ9	28.938	34.629	27.836	1454.5
345.Ø	35Ø.8Ø	-.ØØ8	28.938	34.627	27.835	1454.5
346.Ø	351.75	-.ØØ8	28.939	34.628	27.835	1454.5
347.Ø	352.8Ø	-.ØØ7	28.94Ø	34.628	27.835	1454.5
348.Ø	353.75	-.ØØ7	28.941	34.628	27.835	1454.5
349.Ø	354.85	-.ØØ7	28.941	34.628	27.835	1454.6
35Ø.Ø	355.8Ø	-.ØØ7	28.942	34.628	27.835	1454.6
351.Ø	356.9Ø	-.ØØ6	28.943	34.628	27.835	1454.6
352.Ø	357.85	-.ØØ6	28.944	34.629	27.836	1454.6
353.Ø	358.85	-.ØØ6	28.944	34.628	27.835	1454.6
354.Ø	359.95	-.ØØ4	28.947	34.629	27.835	1454.7
355.Ø	36Ø.9Ø	-.ØØ5	28.947	34.629	27.836	1454.7
356.Ø	362.ØØ	-.ØØ4	28.947	34.628	27.835	1454.7
357.Ø	362.95	-.ØØ3	28.949	34.629	27.836	1454.7
358.Ø	364.Ø5	-.ØØ3	28.949	34.629	27.836	1454.7
359.Ø	365.ØØ	-.ØØ2	28.95Ø	34.629	27.835	1454.8
36Ø.Ø	366.Ø5	-.ØØ3	28.951	34.63Ø	27.836	1454.8
361.Ø	367.ØØ	-.ØØ2	28.952	34.629	27.836	1454.8
362.Ø	368.1Ø	-.ØØ2	28.952	34.629	27.836	1454.8
363.Ø	369.Ø5	-.ØØ2	28.953	34.629	27.836	1454.8
364.Ø	37Ø.Ø5	-.ØØ2	28.953	34.63Ø	27.836	1454.8
365.Ø	371.Ø5	-.ØØ2	28.954	34.63Ø	27.836	1454.9


EXPERIMENT 2309
TEMPERATURE. C
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00
SALINITY O/OO
14.00
18.00
22.00
26.00
30.00
34.00
38.00
SIGMAT
12.00
16.00
20.00
24.00
28.00
32.00
36.00
DEPTH M
10
100
1000
+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN8 EXPERIMENT 2309

LAT.N. 80-34-50 LONG.W. 79-09-30 DATE 032477 G.M.T. 2245

ICE THICKNESS 1.22 M DEPTH INCR 1.00 WATER DEPTH 480 M

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
1.0	.75	-.996	14.309	16.660	13.382	1419.4
2.0	1.80	-1.014	16.354	19.274	15.486	1422.9
3.0	2.70	-.367	21.464	25.382	20.401	1434.3
4.0	3.85	-.134	25.092	29.889	24.023	1441.6
5.0	4.80	-.208	25.593	30.618	24.613	1442.3
6.0	5.90	-.375	25.647	30.858	24.811	1441.9
7.0	6.80	-.520	25.611	30.956	24.896	1441.4
8.0	7.90	-.616	25.577	31.009	24.941	1441.0
9.0	8.90	-.704	25.541	31.049	24.976	1440.7
10.0	9.85	-.790	25.507	31.091	25.013	1440.3
11.0	10.90	-.907	25.496	31.196	25.101	1440.0
12.0	11.90	-.993	25.545	31.351	25.228	1439.8
13.0	12.95	-1.053	25.575	31.453	25.312	1439.7
14.0	13.90	-1.115	25.588	31.536	25.381	1439.5
15.0	15.00	-1.164	25.602	31.605	25.438	1439.4
16.0	15.95	-1.220	25.597	31.656	25.481	1439.2
17.0	17.00	-1.271	25.586	31.694	25.513	1439.0
18.0	18.05	-1.297	25.589	31.725	25.538	1439.0
19.0	19.05	-1.334	25.585	31.759	25.566	1438.9
20.0	20.05	-1.341	25.592	31.775	25.579	1438.9
21.0	21.10	-1.360	25.593	31.796	25.597	1438.8
22.0	22.15	-1.375	25.593	31.811	25.610	1438.8
23.0	23.10	-1.380	25.604	31.831	25.626	1438.8
24.0	24.15	-1.378	25.620	31.850	25.642	1438.9
25.0	25.10	-1.380	25.632	31.868	25.656	1438.9
26.0	26.20	-1.380	25.645	31.884	25.669	1438.9
27.0	27.10	-1.381	25.659	31.905	25.686	1439.0
28.0	28.25	-1.367	25.677	31.914	25.693	1439.1
29.0	29.20	-1.361	25.699	31.937	25.711	1439.2
30.0	30.30	-1.329	25.738	31.955	25.725	1439.4
31.0	31.20	-1.308	25.776	31.985	25.749	1439.5
32.0	32.30	-1.287	25.820	32.022	25.778	1439.7
33.0	33.25	-1.257	25.874	32.063	25.810	1439.9
34.0	34.35	-1.241	25.918	32.106	25.845	1440.0
35.0	35.25	-1.246	25.948	32.151	25.882	1440.1
36.0	36.35	-1.249	25.973	32.188	25.912	1440.2
37.0	37.35	-1.259	25.994	32.227	25.943	1440.2
38.0	38.40	-1.267	26.017	32.265	25.975	1440.2
39.0	39.40	-1.279	26.031	32.298	26.001	1440.2
40.0	40.40	-1.301	26.047	32.342	26.038	1440.2
41.0	41.45	-1.312	26.067	32.380	26.069	1440.2
42.0	42.40	-1.328	26.082	32.417	26.099	1440.2
43.0	43.50	-1.344	26.103	32.464	26.137	1440.2
44.0	44.45	-1.355	26.119	32.496	26.164	1440.2
45.0	45.50	-1.360	26.139	32.528	26.190	1440.3
46.0	46.50	-1.370	26.152	32.556	26.213	1440.3
47.0	47.55	-1.376	26.165	32.581	26.233	1440.3
48.0	48.55	-1.381	26.174	32.598	26.247	1440.3
49.0	49.55	-1.388	26.191	32.628	26.271	1440.3
50.0	50.60	-1.394	26.208	32.658	26.296	1440.4
51.0	51.55	-1.397	26.227	32.686	26.318	1440.4
52.0	52.65	-1.401	26.245	32.715	26.342	1440.4
53.0	53.60	-1.405	26.259	32.738	26.361	1440.5
54.0	54.70	-1.406	26.274	32.758	26.377	1440.5
55.0	55.70	-1.405	26.284	32.771	26.387	1440.6
56.0	56.65	-1.407	26.300	32.794	26.406	1440.6
57.0	57.75	-1.408	26.324	32.827	26.433	1440.7
58.0	58.65	-1.408	26.336	32.843	26.446	1440.7
59.0	59.75	-1.408	26.342	32.851	26.453	1440.7
60.0	60.80	-1.407	26.357	32.870	26.468	1440.8
61.0	61.75	-1.407	26.368	32.884	26.479	1440.8
62.0	62.85	-1.406	26.380	32.900	26.492	1440.9

EXPERIMENT 2309

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
63.Ø	63.8Ø	-1.4Ø4	26.391	32.911	26.5Ø1	144Ø.9
64.Ø	64.8Ø	-1.4Ø4	26.4Ø1	32.925	26.513	144Ø.9
65.Ø	65.85	-1.4Ø4	26.41Ø	32.937	26.522	1441.Ø
66.Ø	66.8Ø	-1.4Ø3	26.426	32.957	26.538	1441.Ø
67.Ø	67.9Ø	-1.397	26.443	32.973	26.551	1441.1
68.Ø	68.9Ø	-1.399	26.454	32.99Ø	26.565	1441.1
69.Ø	69.95	-1.394	26.469	33.ØØ4	26.576	1441.2
7Ø.Ø	7Ø.9Ø	-1.391	26.483	33.Ø2Ø	26.589	1441.2
71.Ø	71.95	-1.387	26.5Ø4	33.Ø43	26.6Ø7	1441.3
72.Ø	73.ØØ	-1.382	26.521	33.Ø61	26.622	1441.4
73.Ø	73.95	-1.378	26.535	33.Ø76	26.634	1441.4
74.Ø	75.ØØ	-1.376	26.549	33.Ø91	26.646	1441.5
75.Ø	76.ØØ	-1.371	26.56Ø	33.1Ø1	26.654	1441.5
76.Ø	77.Ø5	-1.365	26.577	33.117	26.667	1441.6
77.Ø	78.Ø5	-1.364	26.59Ø	33.133	26.68Ø	1441.6
78.Ø	79.1Ø	-1.358	26.6Ø4	33.145	26.689	1441.7
79.Ø	8Ø.Ø5	-1.355	26.621	33.165	26.7Ø5	1441.7
8Ø.Ø	81.15	-1.351	26.634	33.177	26.715	1441.8
81.Ø	82.1Ø	-1.347	26.647	33.19Ø	26.725	1441.9
82.Ø	83.15	-1.34Ø	26.662	33.2Ø2	26.735	1441.9
83.Ø	84.15	-1.335	26.679	33.219	26.749	1442.Ø
84.Ø	85.2Ø	-1.328	26.699	33.239	26.764	1442.1
85.Ø	86.2Ø	-1.325	26.713	33.253	26.776	1442.1
86.Ø	87.2Ø	-1.321	26.729	33.27Ø	26.79Ø	1442.2
87.Ø	88.25	-1.316	26.748	33.291	26.8Ø6	1442.2
88.Ø	89.2Ø	-1.3Ø9	26.769	33.311	26.822	1442.3
89.Ø	9Ø.3Ø	-1.3Ø6	26.783	33.326	26.834	1442.4
9Ø.Ø	91.2Ø	-1.3Ø7	26.795	33.344	26.849	1442.4
91.Ø	92.35	-1.3Ø3	26.812	33.362	26.864	1442.5
92.Ø	93.25	-1.3ØØ	26.829	33.381	26.878	1442.5
93.Ø	94.35	-1.3Ø2	26.841	33.399	26.894	1442.6
94.Ø	95.35	-1.315	26.845	33.419	26.91Ø	1442.5
95.Ø	96.35	-1.322	26.852	33.435	26.923	1442.6
96.Ø	97.4Ø	-1.329	26.858	33.451	26.936	1442.6
97.Ø	98.4Ø	-1.335	26.866	33.467	26.95Ø	1442.6
98.Ø	99.45	-1.33Ø	26.875	33.474	26.955	1442.6
99.Ø	1ØØ.4Ø	-1.311	26.899	33.486	26.964	1442.7
1ØØ.Ø	1Ø1.5Ø	-1.296	26.933	33.514	26.987	1442.9
1Ø1.Ø	1Ø2.5Ø	-1.293	26.95Ø	33.534	27.ØØ2	1442.9
1Ø2.Ø	1Ø3.5Ø	-1.287	26.968	33.551	27.Ø16	1443.Ø
1Ø3.Ø	1Ø4.55	-1.263	27.ØØ3	33.572	27.Ø32	1443.2
1Ø4.Ø	1Ø5.5Ø	-1.239	27.Ø38	33.592	27.Ø48	1443.3
1Ø5.Ø	1Ø6.65	-1.218	27.Ø68	33.61Ø	27.Ø61	1443.5
1Ø6.Ø	1Ø7.55	-1.2Ø5	27.Ø89	33.623	27.Ø72	1443.5
1Ø7.Ø	1Ø8.6Ø	-1.176	27.127	33.643	27.Ø87	1443.7
1Ø8.Ø	1Ø9.6Ø	-1.16Ø	27.152	33.658	27.Ø99	1443.8
1Ø9.Ø	11Ø.6Ø	-1.134	27.182	33.67Ø	27.1Ø8	1444.Ø
11Ø.Ø	111.7Ø	-1.11Ø	27.214	33.685	27.119	1444.1
111.Ø	112.65	-1.Ø79	27.25Ø	33.699	27.13Ø	1444.3
112.Ø	113.7Ø	-1.Ø39	27.294	33.715	27.141	1444.6
113.Ø	114.7Ø	-1.Ø17	27.326	33.733	27.155	1444.7
114.Ø	115.7Ø	-.969	27.373	33.742	27.16Ø	1445.Ø
115.Ø	116.75	-.969	27.387	33.762	27.176	1445.Ø
116.Ø	117.75	-.952	27.411	33.774	27.185	1445.1
117.Ø	118.75	-.931	27.439	33.788	27.197	1445.2
118.Ø	119.8Ø	-.91Ø	27.466	33.8ØØ	27.2Ø6	1445.4
119.Ø	12Ø.8Ø	-.892	27.489	33.811	27.214	1445.5
12Ø.Ø	121.85	-.873	27.515	33.825	27.224	1445.6
121.Ø	122.9Ø	-.853	27.541	33.837	27.233	1445.7
122.Ø	123.8Ø	-.84Ø	27.562	33.85Ø	27.243	1445.8
123.Ø	124.95	-.828	27.578	33.858	27.25Ø	1445.9
124.Ø	125.95	-.812	27.6ØØ	33.869	27.258	1446.Ø
125.Ø	126.9Ø	-.795	27.624	33.883	27.268	1446.1
126.Ø	128.ØØ	-.782	27.644	33.894	27.276	1446.2
127.Ø	129.ØØ	-.77Ø	27.665	33.9Ø9	27.288	1446.3
128.Ø	13Ø.ØØ	-.762	27.679	33.918	27.295	1446.4
129.Ø	131.ØØ	-.755	27.69Ø	33.924	27.3ØØ	1446.5

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DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
13Ø.Ø	132.ØØ	-.749	27.698	33.929	27.3Ø3	1446.5
131.Ø	133.1Ø	-.744	27.7Ø7	33.934	27.3Ø8	1446.6
132.Ø	134.1Ø	-.738	27.717	33.94Ø	27.312	1446.6
133.Ø	135.Ø5	-.734	27.724	33.944	27.316	1446.6
134.Ø	136.15	-.727	27.735	33.95Ø	27.32Ø	1446.7
135.Ø	137.1Ø	-.722	27.742	33.955	27.323	1446.8
136.Ø	138.1Ø	-.712	27.758	33.964	27.331	1446.8
137.Ø	139.2Ø	-.7Ø7	27.767	33.971	27.336	1446.9
138.Ø	14Ø.2Ø	-.7ØØ	27.78Ø	33.979	27.342	1446.9
139.Ø	141.2Ø	-.69Ø	27.795	33.987	27.349	1447.Ø
14Ø.Ø	142.15	-.683	27.8Ø9	33.998	27.357	1447.1
141.Ø	143.25	-.674	27.822	34.ØØ5	27.362	1447.1
142.Ø	144.25	-.667	27.834	34.Ø13	27.369	1447.2
143.Ø	145.3Ø	-.658	27.849	34.Ø22	27.375	1447.3
144.Ø	146.3Ø	-.648	27.865	34.Ø32	27.383	1447.4
145.Ø	147.35	-.64Ø	27.878	34.Ø4Ø	27.389	1447.4
146.Ø	148.3Ø	-.636	27.885	34.Ø44	27.393	1447.5
147.Ø	149.35	-.631	27.893	34.Ø49	27.396	1447.5
148.Ø	15Ø.35	-.623	27.9Ø5	34.Ø55	27.4Ø1	1447.6
149.Ø	151.35	-.615	27.92Ø	34.Ø66	27.4Ø9	1447.6
15Ø.Ø	152.45	-.6Ø7	27.933	34.Ø74	27.415	1447.7
151.Ø	153.4Ø	-.6Ø1	27.944	34.Ø82	27.421	1447.8
152.Ø	154.5Ø	-.594	27.955	34.Ø88	27.426	1447.8
153.Ø	155.45	-.589	27.964	34.Ø93	27.43Ø	1447.9
154.Ø	156.5Ø	-.583	27.974	34.1ØØ	27.435	1447.9
155.Ø	157.55	-.578	27.983	34.1Ø6	27.44Ø	1448.Ø
156.Ø	158.45	-.572	27.994	34.114	27.446	1448.Ø
157.Ø	159.55	-.566	28.ØØ3	34.119	27.45Ø	1448.1
158.Ø	16Ø.55	-.562	28.Ø11	34.124	27.454	1448.1
159.Ø	161.6Ø	-.558	28.Ø18	34.129	27.457	1448.2
16Ø.Ø	162.65	-.552	28.Ø27	34.132	27.46Ø	1448.2
161.Ø	163.6Ø	-.547	28.Ø37	34.14Ø	27.466	1448.3
162.Ø	164.7Ø	-.541	28.Ø47	34.147	27.471	1448.3
163.Ø	165.65	-.538	28.Ø53	34.15Ø	27.474	1448.3
164.Ø	166.7Ø	-.534	28.Ø6Ø	34.155	27.478	1448.4
165.Ø	167.7Ø	-.527	28.Ø7Ø	34.159	27.481	1448.4
166.Ø	168.75	-.522	28.Ø78	34.165	27.485	1448.5
167.Ø	169.75	-.517	28.Ø87	34.17Ø	27.489	1448.5
168.Ø	17Ø.75	-.51Ø	28.Ø97	34.176	27.493	1448.6
169.Ø	171.75	-.5Ø4	28.1Ø8	34.183	27.499	1448.7
17Ø.Ø	172.85	-.496	28.123	34.193	27.5Ø6	1448.7
171.Ø	173.8Ø	-.491	28.13Ø	34.196	27.5Ø9	1448.8
172.Ø	174.85	-.486	28.139	34.2Ø2	27.513	1448.8
173.Ø	175.85	-.478	28.152	34.21Ø	27.52Ø	1448.9
174.Ø	176.85	-.471	28.163	34.216	27.524	1448.9
175.Ø	177.9Ø	-.463	28.178	34.226	27.532	1449.Ø
176.Ø	178.9Ø	-.456	28.19Ø	34.235	27.539	1449.1
177.Ø	179.9Ø	-.452	28.199	34.241	27.544	1449.1
178.Ø	18Ø.95	-.449	28.2Ø3	34.244	27.546	1449.1
179.Ø	182.ØØ	-.442	28.214	34.249	27.549	1449.2
18Ø.Ø	182.95	-.437	28.222	34.254	27.553	1449.2
181.Ø	184.ØØ	-.432	28.232	34.261	27.559	1449.3
182.Ø	185.ØØ	-.427	28.24Ø	34.265	27.562	1449.3
183.Ø	186.Ø5	-.421	28.251	34.273	27.568	1449.4
184.Ø	187.1Ø	-.412	28.262	34.277	27.571	1449.5
185.Ø	188.1Ø	-.4Ø7	28.27Ø	34.282	27.575	1449.5
186.Ø	189.Ø5	-.4Ø4	28.277	34.287	27.579	1449.5
187.Ø	19Ø.1Ø	-.399	28.287	34.294	27.584	1449.6
188.Ø	191.15	-.393	28.297	34.3Ø1	27.589	1449.6
189.Ø	192.2Ø	-.387	28.3Ø7	34.3Ø6	27.593	1449.7
19Ø.Ø	193.15	-.382	28.316	34.311	27.597	1449.7
191.Ø	194.2Ø	-.374	28.327	34.317	27.6Ø1	1449.8
192.Ø	195.2Ø	-.371	28.335	34.323	27.6Ø7	1449.8
193.Ø	196.2Ø	-.353	28.361	34.338	27.617	145Ø.Ø
194.Ø	197.3Ø	-.323	28.399	34.355	27.63Ø	145Ø.1
195.Ø	198.35	-.311	28.427	34.377	27.647	145Ø.2
196.Ø	199.3Ø	-.289	28.456	34.391	27.658	145Ø.4

EXPERIMENT 2309

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
197.Ø	2ØØ.35	-.284	28.469	34.4Ø2	27.666	145Ø.4
198.Ø	2Ø1.4Ø	-.27Ø	28.488	34.412	27.673	145Ø.5
199.Ø	2Ø2.35	-.257	28.5Ø8	34.422	27.681	145Ø.6
2ØØ.Ø	2Ø3.4Ø	-.241	28.533	34.437	27.692	145Ø.7
2Ø1.Ø	2Ø4.45	-.224	28.558	34.45Ø	27.7Ø2	145Ø.9
2Ø2.Ø	2Ø5.4Ø	-.2Ø2	28.591	34.47Ø	27.717	1451.Ø
2Ø3.Ø	2Ø6.5Ø	-.182	28.624	34.49Ø	27.732	1451.1
2Ø4.Ø	2Ø7.45	-.167	28.645	34.5Ø1	27.741	1451.2
2Ø5.Ø	2Ø8.5Ø	-.154	28.667	34.515	27.751	1451.3
2Ø6.Ø	2Ø9.5Ø	-.144	28.681	34.522	27.756	1451.4
2Ø7.Ø	21Ø.5Ø	-.135	28.695	34.529	27.761	1451.5
2Ø8.Ø	211.55	-.127	28.7Ø7	34.536	27.767	1451.5
2Ø9.Ø	212.5Ø	-.12Ø	28.72Ø	34.545	27.773	1451.6
21Ø.Ø	213.6Ø	-.112	28.731	34.55Ø	27.778	1451.7
211.Ø	214.55	-.1Ø7	28.74Ø	34.556	27.782	1451.7
212.Ø	215.65	-.1Ø2	28.747	34.559	27.784	1451.7
213.Ø	216.65	-.Ø98	28.756	34.565	27.789	1451.8
214.Ø	217.6Ø	-.Ø95	28.76Ø	34.567	27.79Ø	1451.8
215.Ø	218.7Ø	-.Ø93	28.764	34.569	27.792	1451.9
216.Ø	219.6Ø	-.Ø9Ø	28.769	34.571	27.793	1451.9
217.Ø	22Ø.75	-.Ø86	28.774	34.573	27.795	1451.9
218.Ø	221.75	-.Ø84	28.779	34.577	27.798	1452.Ø
219.Ø	222.75	-.Ø82	28.783	34.579	27.799	1452.Ø
22Ø.Ø	223.8Ø	-.ØØØ	28.786	34.581	27.8Ø1	1452.Ø
221.Ø	224.7Ø	-.Ø78	28.789	34.582	27.8Ø1	1452.Ø
222.Ø	225.8Ø	-.Ø77	28.792	34.584	27.8Ø3	1452.1
223.Ø	226.8Ø	-.Ø74	28.795	34.584	27.8Ø3	1452.1
224.Ø	227.85	-.Ø73	28.798	34.586	27.8Ø5	1452.1
225.Ø	228.9Ø	-.Ø71	28.8ØØ	34.587	27.8Ø5	1452.1
226.Ø	229.85	-.Ø71	28.8Ø3	34.589	27.8Ø7	1452.2
227.Ø	23Ø.9Ø	-.Ø68	28.8Ø6	34.589	27.8Ø7	1452.2
228.Ø	231.9Ø	-.Ø67	28.8Ø8	34.591	27.8Ø8	1452.2
229.Ø	232.9Ø	-.Ø67	28.81Ø	34.592	27.8Ø9	1452.2
23Ø.Ø	234.ØØ	-.Ø66	28.812	34.593	27.81Ø	1452.3
231.Ø	235.ØØ	-.Ø65	28.813	34.593	27.81Ø	1452.3
232.Ø	235.95	-.Ø64	28.815	34.594	27.81Ø	1452.3
233.Ø	237.1Ø	-.Ø63	28.817	34.595	27.811	1452.3
234.Ø	238.1Ø	-.Ø62	28.819	34.596	27.812	1452.3
235.Ø	239.1Ø	-.Ø61	28.821	34.597	27.813	1452.4
236.Ø	24Ø.2Ø	-.Ø6Ø	28.823	34.597	27.813	1452.4
237.Ø	241.1Ø	-.Ø6Ø	28.824	34.599	27.814	1452.4
238.Ø	242.15	-.Ø59	28.826	34.599	27.814	1452.4
239.Ø	243.2Ø	-.Ø58	28.827	34.599	27.814	1452.5
24Ø.Ø	244.15	-.Ø58	28.828	34.6ØØ	27.815	1452.5
241.Ø	245.2Ø	-.Ø57	28.83Ø	34.6Ø1	27.815	1452.5
242.Ø	246.25	-.Ø56	28.831	34.6Ø1	27.815	1452.5
243.Ø	247.25	-.Ø56	28.833	34.6Ø2	27.817	1452.5
244.Ø	248.3Ø	-.Ø56	28.835	34.6Ø4	27.818	1452.6
245.Ø	249.3Ø	-.Ø54	28.836	34.6Ø3	27.817	1452.6
246.Ø	25Ø.3Ø	-.Ø53	28.838	34.6Ø3	27.817	1452.6
247.Ø	251.3Ø	-.Ø52	28.839	34.6Ø4	27.818	1452.6
248.Ø	252.4Ø	-.Ø52	28.841	34.6Ø6	27.819	1452.6
249.Ø	253.4Ø	-.Ø51	28.843	34.6Ø6	27.82Ø	1452.7
25Ø.Ø	254.35	-.Ø5Ø	28.844	34.6Ø7	27.82Ø	1452.7
251.Ø	255.45	-.Ø49	28.846	34.6Ø7	27.82Ø	1452.7
252.Ø	256.4Ø	-.Ø48	28.847	34.6Ø7	27.82Ø	1452.7
253.Ø	257.4Ø	-.Ø48	28.849	34.6Ø9	27.822	1452.7
254.Ø	258.5Ø	-.Ø47	28.85Ø	34.6Ø9	27.821	1452.8
255.Ø	259.45	-.Ø46	28.852	34.6Ø9	27.821	1452.8
256.Ø	26Ø.4Ø	-.Ø46	28.854	34.611	27.824	1452.8
257.Ø	261.55	-.Ø45	28.855	34.61Ø	27.823	1452.8
258.Ø	262.55	-.Ø44	28.857	34.611	27.823	1452.9
259.Ø	263.5Ø	-.Ø43	28.858	34.611	27.823	1452.9
26Ø.Ø	264.55	-.Ø43	28.859	34.613	27.824	1452.9
261.Ø	265.6Ø	-.Ø42	28.861	34.613	27.825	1452.9
262.Ø	266.6Ø	-.Ø42	28.862	34.614	27.825	1452.9
263.Ø	267.6Ø	-.Ø41	28.864	34.615	27.826	1453.Ø

EXPERIMENT 2309

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
264.Ø	268.7Ø	-.Ø39	28.866	34.614	27.825	1453.Ø
265.Ø	269.65	-.Ø39	28.867	34.615	27.826	1453.Ø
266.Ø	27Ø.75	-.Ø39	28.868	34.616	27.827	1453.Ø
267.Ø	271.7Ø	-.Ø38	28.869	34.616	27.827	1453.Ø
268.Ø	272.7Ø	-.Ø38	28.871	34.617	27.828	1453.1
269.Ø	273.8Ø	-.Ø36	28.872	34.616	27.826	1453.1
27Ø.Ø	274.75	-.Ø36	28.873	34.616	27.827	1453.1
271.Ø	275.85	-.Ø36	28.874	34.618	27.828	1453.1
272.Ø	276.8Ø	-.Ø36	28.874	34.618	27.828	1453.1
273.Ø	277.95	-.Ø35	28.875	34.617	27.828	1453.2
274.Ø	278.85	-.Ø35	28.876	34.618	27.828	1453.2
275.Ø	279.95	-.Ø35	28.877	34.619	27.829	1453.2
276.Ø	28Ø.95	-.Ø34	28.879	34.619	27.829	1453.2
277.Ø	281.95	-.Ø34	28.88Ø	34.62Ø	27.83Ø	1453.2
278.Ø	283.ØØ	-.Ø33	28.881	34.62Ø	27.83Ø	1453.3
279.Ø	283.95	-.Ø33	28.882	34.62Ø	27.83Ø	1453.3
28Ø.Ø	285.ØØ	-.Ø32	28.883	34.619	27.829	1453.3
281.Ø	286.Ø5	-.Ø31	28.884	34.619	27.829	1453.3
282.Ø	287.ØØ	-.Ø3Ø	28.886	34.62Ø	27.829	1453.3
283.Ø	288.15	-.Ø3Ø	28.887	34.62Ø	27.83Ø	1453.4
284.Ø	289.Ø5	-.Ø3Ø	28.887	34.62Ø	27.83Ø	1453.4
285.Ø	29Ø.15	-.Ø3Ø	28.888	34.621	27.831	1453.4
286.Ø	291.1Ø	-.Ø29	28.89Ø	34.621	27.831	1453.4
287.Ø	292.15	-.Ø29	28.891	34.623	27.832	1453.4
288.Ø	293.2Ø	-.Ø27	28.892	34.622	27.831	1453.4
289.Ø	294.15	-.Ø28	28.893	34.624	27.833	1453.5
29Ø.Ø	295.2Ø	-.Ø26	28.895	34.623	27.832	1453.5
291.Ø	296.2Ø	-.Ø26	28.896	34.624	27.833	1453.5
292.Ø	297.2Ø	-.Ø25	28.897	34.623	27.832	1453.5
293.Ø	298.25	-.Ø25	28.898	34.624	27.832	1453.5
294.Ø	299.25	-.Ø24	28.899	34.623	27.832	1453.6
295.Ø	3ØØ.35	-.Ø24	28.9ØØ	34.624	27.833	1453.6
296.Ø	3Ø1.25	-.Ø23	28.9Ø1	34.624	27.833	1453.6
297.Ø	3Ø2.25	-.Ø23	28.9Ø2	34.625	27.833	1453.6
298.Ø	3Ø3.4Ø	-.Ø22	28.9Ø3	34.624	27.833	1453.6
299.Ø	3Ø4.35	-.Ø22	28.9Ø4	34.625	27.833	1453.7
3ØØ.Ø	3Ø5.4Ø	-.Ø22	28.9Ø5	34.625	27.833	1453.7
3Ø1.Ø	3Ø6.4Ø	-.Ø22	28.9Ø5	34.625	27.833	1453.7
3Ø2.Ø	3Ø7.4Ø	-.Ø22	28.9Ø6	34.625	27.834	1453.7
3Ø3.Ø	3Ø8.45	-.Ø22	28.9Ø7	34.626	27.834	1453.7
3Ø4.Ø	3Ø9.45	-.Ø21	28.9Ø8	34.626	27.834	1453.7
3Ø5.Ø	31Ø.5Ø	-.Ø21	28.9Ø9	34.627	27.835	1453.8
3Ø6.Ø	311.5Ø	-.Ø2Ø	28.91Ø	34.626	27.834	1453.8
3Ø7.Ø	312.55	-.Ø19	28.911	34.627	27.834	1453.8
3Ø8.Ø	313.6Ø	-.Ø2Ø	28.912	34.628	27.835	1453.8
3Ø9.Ø	314.6Ø	-.Ø19	28.913	34.627	27.835	1453.8
31Ø.Ø	315.65	-.Ø19	28.913	34.627	27.835	1453.9
311.Ø	316.65	-.Ø19	28.914	34.627	27.835	1453.9
312.Ø	317.7Ø	-.Ø19	28.915	34.628	27.836	1453.9
313.Ø	318.7Ø	-.Ø19	28.915	34.628	27.836	1453.9
314.Ø	319.65	-.Ø18	28.917	34.628	27.836	1453.9
315.Ø	32Ø.75	-.Ø18	28.917	34.628	27.836	1454.Ø
316.Ø	321.75	-.Ø17	28.919	34.629	27.837	1454.Ø
317.Ø	322.8Ø	-.Ø17	28.919	34.629	27.836	1454.Ø
318.Ø	323.75	-.Ø17	28.92Ø	34.629	27.837	1454.Ø
319.Ø	324.85	-.Ø16	28.921	34.629	27.836	1454.Ø
32Ø.Ø	325.85	-.Ø16	28.922	34.629	27.836	1454.Ø
321.Ø	326.9Ø	-.Ø16	28.923	34.63Ø	27.837	1454.1
322.Ø	327.9Ø	-.Ø15	28.924	34.629	27.836	1454.1
323.Ø	328.9Ø	-.Ø15	28.925	34.63Ø	27.837	1454.1
324.Ø	329.9Ø	-.Ø15	28.926	34.631	27.838	1454.1
325.Ø	33Ø.95	-.Ø13	28.927	34.629	27.836	1454.1
326.Ø	331.9Ø	-.Ø14	28.927	34.63Ø	27.837	1454.2
327.Ø	333.ØØ	-.Ø13	28.928	34.631	27.837	1454.2
328.Ø	333.95	-.Ø13	28.929	34.631	27.838	1454.2
329.Ø	334.95	-.Ø12	28.93Ø	34.63Ø	27.837	1454.2
33Ø.Ø	336.Ø5	-.Ø13	28.93Ø	34.631	27.838	1454.2

EXPERIMENT 2309

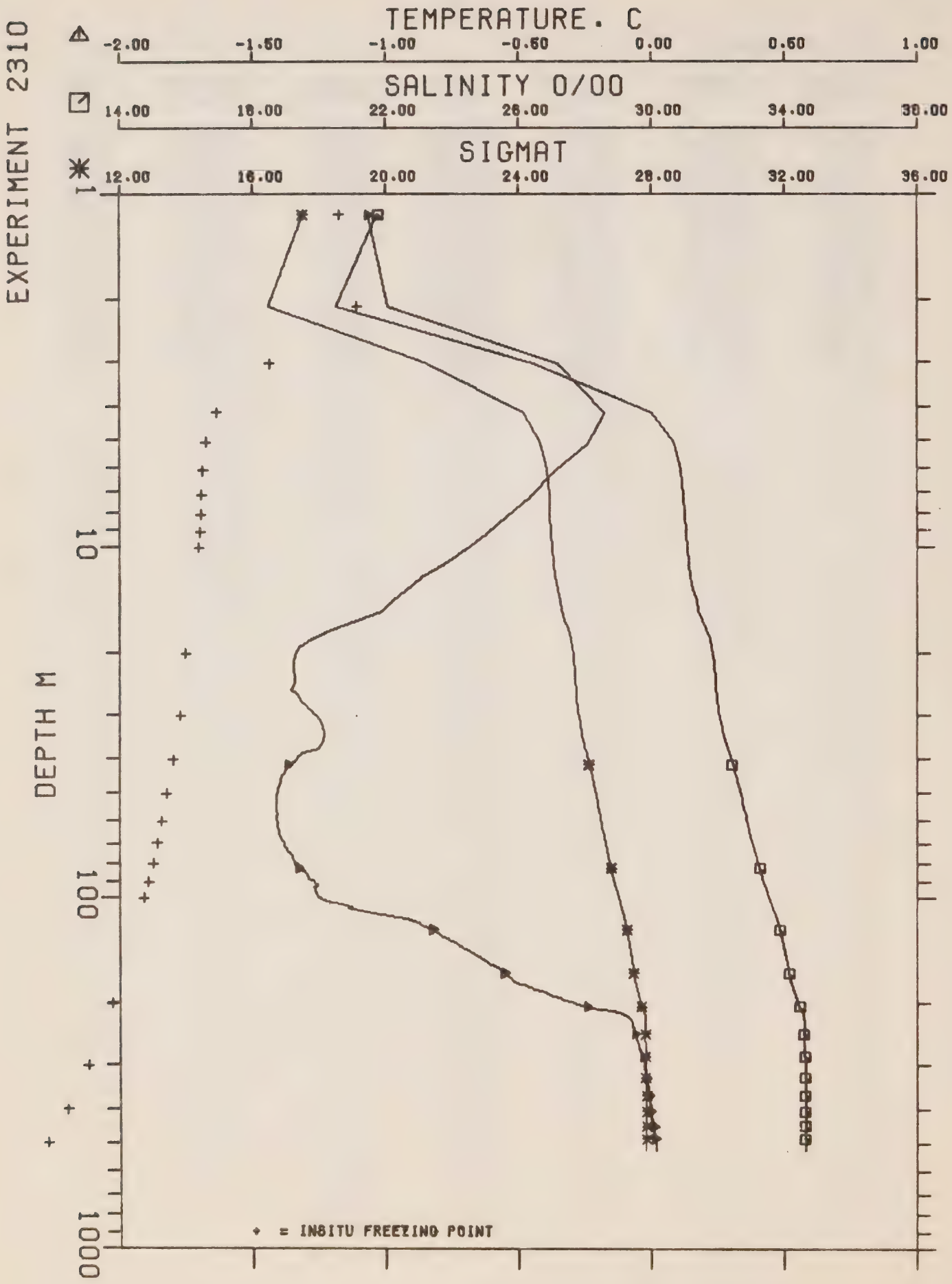
DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
331.Ø	337.ØØ	-.Ø12	28.932	34.632	27.838	1454.3
332.Ø	338.ØØ	-.Ø12	28.932	34.631	27.838	1454.3
333.Ø	339.Ø5	-.Ø12	28.932	34.631	27.838	1454.3
334.Ø	34Ø.1Ø	-.Ø12	28.933	34.632	27.838	1454.3
335.Ø	341.Ø5	-.Ø11	28.934	34.631	27.837	1454.3
336.Ø	342.1Ø	-.Ø12	28.935	34.633	27.839	1454.3
337.Ø	343.15	-.Ø11	28.936	34.632	27.838	1454.4
338.Ø	344.15	-.ØØ9	28.938	34.632	27.838	1454.4
339.Ø	345.2Ø	-.ØØ9	28.939	34.632	27.839	1454.4
34Ø.Ø	346.2Ø	-.ØØ9	28.939	34.632	27.838	1454.4
341.Ø	347.2Ø	-.ØØ9	28.94Ø	34.633	27.839	1454.4
342.Ø	348.25	-.ØØ8	28.94Ø	34.632	27.838	1454.5
343.Ø	349.3Ø	-.ØØ9	28.941	34.633	27.839	1454.5
344.Ø	35Ø.25	-.ØØ7	28.942	34.631	27.838	1454.5
345.Ø	351.35	-.ØØ8	28.943	34.634	27.84Ø	1454.5
346.Ø	352.35	-.ØØ7	28.944	34.633	27.839	1454.5
347.Ø	353.35	-.ØØ7	28.945	34.633	27.839	1454.5
348.Ø	354.4Ø	-.ØØ6	28.946	34.633	27.839	1454.6
349.Ø	355.4Ø	-.ØØ6	28.946	34.633	27.839	1454.6
35Ø.Ø	356.5Ø	-.ØØ6	28.947	34.634	27.839	1454.6
351.Ø	357.45	-.ØØ6	28.948	34.634	27.839	1454.6
352.Ø	358.45	-.ØØ6	28.948	34.634	27.84Ø	1454.6
353.Ø	359.55	-.ØØ5	28.949	34.634	27.84Ø	1454.7
354.Ø	36Ø.5Ø	-.ØØ6	28.95Ø	34.635	27.841	1454.7
355.Ø	361.55	-.ØØ5	28.95Ø	34.634	27.84Ø	1454.7
356.Ø	362.6Ø	-.ØØ5	28.951	34.635	27.84Ø	1454.7
357.Ø	363.55	-.ØØ5	28.952	34.635	27.84Ø	1454.7
358.Ø	364.6Ø	-.ØØ4	28.952	34.634	27.839	1454.7
359.Ø	365.65	-.ØØ4	28.953	34.634	27.84Ø	1454.8
36Ø.Ø	366.6Ø	-.ØØ5	28.953	34.635	27.84Ø	1454.8
361.Ø	367.7Ø	-.ØØ5	28.955	34.636	27.842	1454.8
362.Ø	368.65	-.ØØ4	28.955	34.635	27.841	1454.8
363.Ø	369.65	-.ØØ3	28.956	34.634	27.84Ø	1454.8
364.Ø	37Ø.75	-.ØØ3	28.956	34.634	27.84Ø	1454.8
365.Ø	371.7Ø	-.ØØ3	28.957	34.635	27.84Ø	1454.9
366.Ø	372.75	-.ØØ3	28.958	34.636	27.841	1454.9
367.Ø	373.7Ø	-.ØØ3	28.959	34.636	27.841	1454.9
368.Ø	374.75	-.ØØ3	28.959	34.635	27.84Ø	1454.9
369.Ø	375.8Ø	-.ØØ3	28.96Ø	34.636	27.841	1454.9
37Ø.Ø	376.8Ø	-.ØØ2	28.961	34.635	27.841	1455.Ø
371.Ø	377.85	-.ØØ2	28.961	34.635	27.841	1455.Ø
372.Ø	378.8Ø	-.ØØ1	28.963	34.636	27.841	1455.Ø
373.Ø	379.9Ø	-.ØØ2	28.963	34.636	27.841	1455.Ø
374.Ø	38Ø.85	-.ØØ2	28.963	34.636	27.841	1455.Ø
375.Ø	381.95	-.ØØ2	28.964	34.636	27.841	1455.Ø
376.Ø	382.95	-.ØØ1	28.965	34.636	27.841	1455.1
377.Ø	383.95	-.ØØ1	28.965	34.635	27.84Ø	1455.1
378.Ø	385.ØØ	-.ØØ1	28.966	34.636	27.841	1455.1
379.Ø	385.95	.ØØØ	28.967	34.635	27.841	1455.1
38Ø.Ø	387.Ø5	.ØØØ	28.967	34.635	27.841	1455.1
381.Ø	388.ØØ	-.ØØ1	28.967	34.636	27.841	1455.1
382.Ø	389.15	.ØØØ	28.968	34.636	27.841	1455.2
383.Ø	39Ø.1Ø	.ØØØ	28.969	34.636	27.841	1455.2
384.Ø	391.2Ø	.ØØØ	28.969	34.636	27.841	1455.2
385.Ø	392.15	.ØØØ	28.97Ø	34.636	27.841	1455.2
386.Ø	393.2Ø	.ØØ1	28.971	34.636	27.841	1455.2
387.Ø	394.25	.ØØ1	28.972	34.637	27.842	1455.3
388.Ø	395.2Ø	.ØØ1	28.972	34.637	27.842	1455.3
389.Ø	396.25	.ØØ1	28.972	34.636	27.841	1455.3
39Ø.Ø	397.3Ø	.ØØ2	28.974	34.636	27.841	1455.3
391.Ø	398.25	.ØØ2	28.974	34.636	27.841	1455.3
392.Ø	399.35	.ØØ2	28.975	34.637	27.842	1455.3
393.Ø	4ØØ.35	.ØØ2	28.976	34.637	27.842	1455.4
394.Ø	4Ø1.35	.ØØ3	28.977	34.637	27.842	1455.4
395.Ø	4Ø2.35	.ØØ3	28.977	34.637	27.842	1455.4
396.Ø	4Ø3.4Ø	.ØØ3	28.978	34.637	27.842	1455.4
397.Ø	4Ø4.45	.ØØ3	28.978	34.637	27.842	1455.4

EXPERIMENT 2309

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
398.Ø	4Ø5.35	.ØØ3	28.98Ø	34.638	27.843	1455.5
399.Ø	4Ø6.45	.ØØ4	28.98Ø	34.637	27.842	1455.5
4ØØ.Ø	4Ø7.5Ø	.ØØ4	28.981	34.637	27.842	1455.5
4Ø1.Ø	4Ø8.45	.ØØ3	28.981	34.638	27.842	1455.5
4Ø2.Ø	4Ø9.5Ø	.ØØ4	28.981	34.637	27.841	1455.5
4Ø3.Ø	41Ø.55	.ØØ4	28.982	34.637	27.842	1455.5
4Ø4.Ø	411.5Ø	.ØØ4	28.983	34.637	27.842	1455.6
4Ø5.Ø	412.6Ø	.ØØ5	28.983	34.636	27.841	1455.6
4Ø6.Ø	413.55	.ØØ4	28.984	34.638	27.842	1455.6
4Ø7.Ø	414.55	.ØØ4	28.984	34.638	27.842	1455.6
4Ø8.Ø	415.65	.ØØ5	28.984	34.636	27.841	1455.6
4Ø9.Ø	416.65	.ØØ4	28.985	34.638	27.842	1455.6
41Ø.Ø	417.6Ø	.ØØ5	28.986	34.637	27.841	1455.7
411.Ø	418.7Ø	.ØØ5	28.987	34.638	27.842	1455.7
412.Ø	419.65	.ØØ6	28.988	34.637	27.842	1455.7
413.Ø	42Ø.75	.ØØ6	28.988	34.637	27.842	1455.7
414.Ø	421.75	.ØØ5	28.989	34.638	27.843	1455.7
415.Ø	422.7Ø	.ØØ5	28.989	34.638	27.842	1455.7
416.Ø	423.8Ø	.ØØ6	28.99Ø	34.638	27.842	1455.8
417.Ø	424.85	.ØØ6	28.991	34.638	27.842	1455.8
418.Ø	425.8Ø	.ØØ6	28.991	34.638	27.842	1455.8
419.Ø	426.95	.ØØ7	28.992	34.637	27.842	1455.8
42Ø.Ø	427.9Ø	.ØØ7	28.992	34.638	27.842	1455.8
421.Ø	428.95	.ØØ7	28.993	34.638	27.842	1455.9
422.Ø	43Ø.ØØ	.ØØ8	28.994	34.637	27.842	1455.9
423.Ø	43Ø.95	.ØØ9	28.995	34.637	27.842	1455.9
424.Ø	432.ØØ	.ØØ9	28.996	34.637	27.842	1455.9
425.Ø	433.ØØ	.ØØ9	28.996	34.637	27.841	1455.9
426.Ø	434.Ø5	.ØØ8	28.996	34.638	27.842	1455.9
427.Ø	435.1Ø	.Ø11	28.999	34.637	27.842	1456.Ø
428.Ø	436.Ø5	.Ø11	28.999	34.637	27.842	1456.Ø
429.Ø	437.15	.Ø11	29.ØØØ	34.637	27.842	1456.Ø
43Ø.Ø	438.15	.Ø11	29.ØØ1	34.639	27.843	1456.Ø
431.Ø	439.2Ø	.Ø11	29.ØØ2	34.639	27.843	1456.Ø
432.Ø	44Ø.2Ø	.Ø11	29.ØØ2	34.639	27.843	1456.1
433.Ø	441.15	.Ø12	29.ØØ3	34.638	27.842	1456.1
434.Ø	442.25	.Ø12	29.ØØ3	34.638	27.842	1456.1
435.Ø	443.2Ø	.Ø12	29.ØØ4	34.638	27.842	1456.1
436.Ø	444.25	.Ø12	29.ØØ4	34.638	27.842	1456.1
437.Ø	445.25	.Ø11	29.ØØ5	34.639	27.843	1456.1
438.Ø	446.25	.Ø12	29.ØØ5	34.638	27.842	1456.2
439.Ø	447.3Ø	.Ø12	29.ØØ6	34.639	27.843	1456.2
44Ø.Ø	448.25	.Ø12	29.ØØ7	34.639	27.843	1456.2
441.Ø	449.35	.Ø16	29.Ø11	34.639	27.843	1456.2
442.Ø	45Ø.3Ø	.Ø16	29.Ø12	34.64Ø	27.843	1456.3
443.Ø	451.4Ø	.Ø17	29.Ø12	34.639	27.842	1456.3
444.Ø	452.3Ø	.Ø17	29.Ø13	34.639	27.842	1456.3
445.Ø	453.4Ø	.Ø16	29.Ø13	34.64Ø	27.843	1456.3
446.Ø	454.4Ø	.Ø17	29.Ø14	34.639	27.843	1456.3
447.Ø	455.45	.Ø17	29.Ø14	34.639	27.842	1456.3
448.Ø	456.45	.Ø17	29.Ø15	34.639	27.843	1456.4
449.Ø	457.5Ø	.Ø17	29.Ø15	34.639	27.843	1456.4
45Ø.Ø	458.55	.Ø17	29.Ø15	34.639	27.843	1456.4
451.Ø	459.45	.Ø17	29.Ø16	34.639	27.843	1456.4
452.Ø	46Ø.55	.Ø18	29.Ø17	34.639	27.842	1456.4
453.Ø	461.6Ø	.Ø17	29.Ø17	34.639	27.843	1456.4
454.Ø	462.55	.Ø17	29.Ø18	34.64Ø	27.843	1456.5
455.Ø	463.6Ø	.Ø18	29.Ø18	34.638	27.842	1456.5
456.Ø	464.7Ø	.Ø17	29.Ø19	34.64Ø	27.843	1456.5
457.Ø	465.65	.Ø17	29.Ø19	34.64Ø	27.843	1456.5
458.Ø	466.7Ø	.Ø18	29.Ø2Ø	34.639	27.843	1456.5
459.Ø	467.75	.Ø18	29.Ø2Ø	34.639	27.843	1456.5
46Ø.Ø	468.75	.Ø18	29.Ø21	34.639	27.843	1456.6
461.Ø	469.8Ø	.Ø17	29.Ø21	34.64Ø	27.844	1456.6
462.Ø	47Ø.8Ø	.Ø17	29.Ø22	34.64Ø	27.844	1456.6
463.Ø	471.8Ø	.Ø18	29.Ø22	34.639	27.842	1456.6
464.Ø	472.9Ø	.Ø18	29.Ø23	34.639	27.843	1456.6

EXPERIMENT 2309

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
465.Ø	473.85	.Ø18	29.Ø23	34.639	27.843	1456.6
466.Ø	474.9Ø	.Ø17	29.Ø24	34.64Ø	27.844	1456.7
467.Ø	475.9Ø	.Ø17	29.Ø24	34.641	27.844	1456.7
468.Ø	476.9Ø	.Ø18	29.Ø25	34.639	27.843	1456.7
469.Ø	477.95	.Ø18	29.Ø25	34.64Ø	27.843	1456.7
47Ø.Ø	478.95	.Ø17	29.Ø26	34.641	27.844	1456.7
471.Ø	479.95	.Ø17	29.Ø26	34.64Ø	27.844	1456.7
472.Ø	481.ØØ	.Ø18	29.Ø27	34.64Ø	27.843	1456.8
473.Ø	481.95	.Ø19	29.Ø27	34.639	27.842	1456.8
474.Ø	483.ØØ	.Ø19	29.Ø28	34.639	27.842	1456.8
475.Ø	484.ØØ	.Ø18	29.Ø29	34.641	27.844	1456.8
476.Ø	485.ØØ	.Ø18	29.Ø29	34.64Ø	27.843	1456.8
477.Ø	486.1Ø	.Ø18	29.Ø29	34.64Ø	27.843	1456.8
478.Ø	487.ØØ	.Ø19	29.Ø3Ø	34.639	27.843	1456.9
479.Ø	488.1Ø	.Ø18	29.Ø3Ø	34.64Ø	27.844	1456.9


EXPERIMENT 2310
TEMPERATURE. C
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00
SALINITY O/OO
14.00
18.00
22.00
26.00
30.00
34.00
38.00
SIGMAT
12.00
16.00
20.00
24.00
28.00
32.00
36.00
DEPTH M
1
10
100
1000
+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN9 EXPERIMENT 2310

LAT.N. 80-34-15 LONG.W. 79-35-20 DATE 032577 G.M.T. 2425

ICE THICKNESS 1.24 M DEPTH INCR 1.00 WATER DEPTH 513 M

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
1.0	1.15	-1.065	18.267	21.780	17.504	1426.1
2.0	2.10	-.990	17.345	20.533	16.499	1424.7
3.0	3.05	-.348	22.300	26.449	21.259	1435.9
4.0	4.20	-.176	25.140	29.992	24.107	1441.6
5.0	5.10	-.239	25.608	30.669	24.655	1442.3
6.0	6.15	-.365	25.670	30.878	24.827	1442.0
7.0	7.20	-.456	25.666	30.964	24.900	1441.7
8.0	8.20	-.546	25.630	31.007	24.938	1441.3
9.0	9.20	-.618	25.600	31.040	24.966	1441.1
10.0	10.20	-.699	25.565	31.076	24.998	1440.8
11.0	11.25	-.781	25.528	31.110	25.028	1440.4
12.0	12.20	-.865	25.506	31.165	25.075	1440.1
13.0	13.30	-.927	25.526	31.256	25.150	1440.0
14.0	14.25	-.977	25.554	31.345	25.223	1439.9
15.0	15.30	-1.015	25.574	31.411	25.277	1439.8
16.0	16.25	-1.108	25.593	31.533	25.379	1439.6
17.0	17.35	-1.207	25.608	31.656	25.480	1439.3
18.0	18.30	-1.281	25.624	31.756	25.563	1439.1
19.0	19.35	-1.323	25.637	31.817	25.613	1439.0
20.0	20.30	-1.340	25.649	31.852	25.642	1439.0
21.0	21.40	-1.345	25.662	31.874	25.660	1439.0
22.0	22.35	-1.344	25.676	31.891	25.674	1439.1
23.0	23.40	-1.340	25.693	31.910	25.689	1439.1
24.0	24.40	-1.339	25.704	31.923	25.699	1439.2
25.0	25.40	-1.355	25.702	31.937	25.711	1439.1
26.0	26.45	-1.329	25.735	31.953	25.724	1439.3
27.0	27.45	-1.315	25.755	31.966	25.734	1439.4
28.0	28.45	-1.293	25.789	31.989	25.751	1439.5
29.0	29.45	-1.273	25.827	32.019	25.775	1439.7
30.0	30.50	-1.255	25.868	32.053	25.803	1439.8
31.0	31.50	-1.241	25.900	32.082	25.825	1440.0
32.0	32.60	-1.234	25.923	32.105	25.845	1440.1
33.0	33.50	-1.231	25.948	32.136	25.869	1440.1
34.0	34.55	-1.232	25.968	32.164	25.892	1440.2
35.0	35.55	-1.237	25.991	32.200	25.921	1440.2
36.0	36.60	-1.245	26.012	32.236	25.950	1440.2
37.0	37.60	-1.257	26.028	32.271	25.979	1440.3
38.0	38.65	-1.317	26.019	32.322	26.022	1440.1
39.0	39.65	-1.331	26.033	32.356	26.049	1440.1
40.0	40.65	-1.341	26.049	32.387	26.076	1440.1
41.0	41.70	-1.366	26.054	32.420	26.103	1440.0
42.0	42.65	-1.373	26.080	32.464	26.138	1440.1
43.0	43.75	-1.382	26.096	32.494	26.163	1440.1
44.0	44.70	-1.392	26.114	32.529	26.192	1440.1
45.0	45.70	-1.396	26.134	32.560	26.217	1440.1
46.0	46.75	-1.396	26.146	32.577	26.230	1440.2
47.0	47.70	-1.398	26.168	32.609	26.256	1440.2
48.0	48.80	-1.403	26.185	32.636	26.278	1440.3
49.0	49.75	-1.405	26.200	32.659	26.297	1440.3
50.0	50.80	-1.409	26.215	32.683	26.317	1440.3
51.0	51.80	-1.408	26.229	32.701	26.331	1440.4
52.0	52.75	-1.409	26.242	32.719	26.346	1440.4
53.0	53.85	-1.410	26.250	32.730	26.355	1440.4
54.0	54.80	-1.410	26.268	32.754	26.374	1440.5
55.0	55.85	-1.409	26.286	32.777	26.393	1440.6
56.0	56.90	-1.409	26.301	32.798	26.409	1440.6
57.0	57.85	-1.407	26.320	32.821	26.428	1440.7
58.0	58.95	-1.409	26.330	32.836	26.440	1440.7
59.0	59.90	-1.408	26.340	32.849	26.451	1440.7
60.0	60.90	-1.406	26.353	32.864	26.463	1440.8
61.0	61.95	-1.406	26.368	32.884	26.479	1440.8
62.0	62.95	-1.403	26.383	32.901	26.493	1440.9

EXPERIMENT 2310

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
197.Ø	2ØØ.Ø5	-.279	28.478	34.4Ø9	27.671	145Ø.5
198.Ø	2Ø1.Ø5	-.272	28.492	34.419	27.679	145Ø.5
199.Ø	2Ø2.15	-.261	28.5Ø6	34.425	27.684	145Ø.6
2ØØ.Ø	2Ø3.Ø5	-.251	28.521	34.433	27.689	145Ø.7
2Ø1.Ø	2Ø4.15	-.243	28.537	34.445	27.699	145Ø.8
2Ø2.Ø	2Ø5.1Ø	-.234	28.549	34.45Ø	27.7Ø3	145Ø.8
2Ø3.Ø	2Ø6.2Ø	-.222	28.562	34.453	27.7Ø4	145Ø.9
2Ø4.Ø	2Ø7.15	-.192	28.6Ø7	34.479	27.724	1451.1
2Ø5.Ø	2Ø8.2Ø	-.169	28.639	34.494	27.735	1451.2
2Ø6.Ø	2Ø9.25	-.151	28.667	34.511	27.748	1451.4
2Ø7.Ø	21Ø.15	-.136	28.694	34.529	27.762	1451.5
2Ø8.Ø	211.25	-.126	28.7Ø8	34.537	27.767	1451.5
2Ø9.Ø	212.2Ø	-.115	28.725	34.546	27.774	1451.6
21Ø.Ø	213.25	-.1Ø6	28.738	34.552	27.779	1451.7
211.Ø	214.3Ø	-.1ØØ	28.749	34.559	27.784	1451.7
212.Ø	215.3Ø	-.Ø95	28.758	34.565	27.789	1451.8
213.Ø	216.4Ø	-.Ø91	28.765	34.569	27.792	1451.8
214.Ø	217.35	-.Ø87	28.772	34.574	27.795	1451.9
215.Ø	218.4Ø	-.Ø84	28.776	34.575	27.796	1451.9
216.Ø	219.4Ø	-.Ø82	28.78Ø	34.578	27.798	1451.9
217.Ø	22Ø.4Ø	-.Ø79	28.784	34.58Ø	27.8ØØ	1452.Ø
218.Ø	221.45	-.Ø76	28.79Ø	34.583	27.8Ø2	1452.Ø
219.Ø	222.45	-.Ø74	28.794	34.585	27.8Ø4	1452.Ø
22Ø.Ø	223.5Ø	-.Ø73	28.796	34.586	27.8Ø4	1452.Ø
221.Ø	224.5Ø	-.Ø72	28.797	34.587	27.8Ø5	1452.1
222.Ø	225.45	-.Ø72	28.799	34.589	27.8Ø6	1452.1
223.Ø	226.55	-.Ø7Ø	28.8Ø1	34.588	27.8Ø6	1452.1
224.Ø	227.55	-.Ø7Ø	28.8Ø2	34.589	27.8Ø7	1452.1
225.Ø	228.5Ø	-.Ø69	28.8Ø4	34.59Ø	27.8Ø7	1452.2
226.Ø	229.65	-.Ø69				
227.Ø	23Ø.6Ø	-.Ø68				
228.Ø	231.6Ø	-.Ø68	28.8Ø8	34.591	27.8Ø9	1452.2
229.Ø	232.65	-.Ø67	28.8Ø9	34.591	27.8Ø8	1452.2
23Ø.Ø	233.6Ø	-.Ø67				
231.Ø	234.65	-.Ø67				
232.Ø	235.7Ø	-.Ø67	28.812	34.594	27.81Ø	1452.3
233.Ø	236.7Ø	-.Ø65	28.813	34.592	27.8Ø9	1452.3
234.Ø	237.75	-.Ø65	28.814	34.593	27.81Ø	1452.3
235.Ø	238.75	-.Ø64	28.816	34.594	27.81Ø	1452.3
236.Ø	239.7Ø	-.Ø64	28.816	34.594	27.81Ø	1452.4
237.Ø	24Ø.75	-.Ø64	28.818	34.595	27.811	1452.4
238.Ø	241.75	-.Ø63	28.819	34.595	27.811	1452.4
239.Ø	242.75	-.Ø62	28.821	34.596	27.812	1452.4
24Ø.Ø	243.8Ø	-.Ø61	28.823	34.596	27.812	1452.4
241.Ø	244.85	-.Ø6Ø	28.826	34.598	27.814	1452.5
242.Ø	245.8Ø	-.Ø59	28.827	34.599	27.814	1452.5
243.Ø	246.85	-.Ø58	28.829	34.599	27.815	1452.5
244.Ø	247.9Ø	-.Ø57	28.83Ø	34.6ØØ	27.815	1452.5
245.Ø	248.85	-.Ø57	28.831	34.6ØØ	27.815	1452.6
246.Ø	249.85	-.Ø57	28.833	34.6Ø2	27.817	1452.6
247.Ø	25Ø.95	-.Ø54	28.836	34.6Ø2	27.816	1452.6
248.Ø	251.9Ø	-.Ø54	28.837	34.6Ø3	27.817	1452.6
249.Ø	252.9Ø	-.Ø53	28.84Ø	34.6Ø4	27.818	1452.6
25Ø.Ø	253.95	-.Ø52	28.842	34.6Ø5	27.819	1452.7
251.Ø	254.95	-.Ø51	28.843	34.6Ø5	27.819	1452.7
252.Ø	255.95	-.Ø5Ø	28.846	34.6Ø8	27.821	1452.7
253.Ø	257.Ø5	-.Ø48	28.848	34.6Ø7	27.82Ø	1452.7
254.Ø	258.1Ø	-.Ø48	28.849	34.6Ø9	27.821	1452.8
255.Ø	259.Ø5	-.Ø47	28.851	34.6Ø9	27.822	1452.8
256.Ø	26Ø.1Ø	-.Ø47	28.853	34.611	27.823	1452.8
257.Ø	261.15	-.Ø45	28.855	34.611	27.823	1452.8
258.Ø	262.1Ø	-.Ø45	28.856	34.611	27.823	1452.8
259.Ø	263.1Ø	-.Ø44	28.857	34.611	27.823	1452.9
26Ø.Ø	264.2Ø	-.Ø44	28.858	34.612	27.824	1452.9
261.Ø	265.2Ø	-.Ø43	28.859	34.612	27.824	1452.9
262.Ø	266.15	-.Ø43	28.86Ø	34.612	27.824	1452.9
263.Ø	267.2Ø	-.Ø43	28.861	34.614	27.825	1452.9

EXPERIMENT 2310

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
264.Ø	268.15	-.Ø43	28.862	34.614	27.825	1453.Ø
265.Ø	269.25	-.Ø42	28.863	34.614	27.825	1453.Ø
266.Ø	27Ø.25	-.Ø41	28.865	34.615	27.826	1453.Ø
267.Ø	271.3Ø	-.Ø4Ø	28.866	34.614	27.826	1453.Ø
268.Ø	272.3Ø	-.Ø4Ø	28.867	34.615	27.826	1453.Ø
269.Ø	273.25	-.Ø39	28.869	34.616	27.827	1453.1
27Ø.Ø	274.35	-.Ø37	28.871	34.616	27.827	1453.1
271.Ø	275.35	-.Ø37	28.872	34.616	27.827	1453.1
272.Ø	276.35	-.Ø36	28.874	34.617	27.828	1453.1
273.Ø	277.4Ø	-.Ø35	28.875	34.617	27.827	1453.1
274.Ø	278.35	-.Ø35	28.876	34.618	27.828	1453.2
275.Ø	279.45	-.Ø34	28.878	34.619	27.829	1453.2
276.Ø	28Ø.4Ø	-.Ø33	28.88Ø	34.619	27.829	1453.2
277.Ø	281.45	-.Ø32	28.881	34.619	27.829	1453.2
278.Ø	282.45	-.Ø32	28.883	34.621	27.83Ø	1453.2
279.Ø	283.4Ø	-.Ø32	28.884	34.622	27.831	1453.3
28Ø.Ø	284.5Ø	-.Ø29	28.885	34.619	27.829	1453.3
281.Ø	285.5Ø	-.Ø29	28.887	34.621	27.831	1453.3
282.Ø	286.45	-.Ø29	28.889	34.623	27.832	1453.3
283.Ø	287.55	-.Ø28	28.889	34.622	27.831	1453.4
284.Ø	288.5Ø	-.Ø28	28.89Ø	34.622	27.832	1453.4
285.Ø	289.6Ø	-.Ø28	28.891	34.623	27.832	1453.4
286.Ø	29Ø.6Ø	-.Ø27	28.891	34.622	27.831	1453.4
287.Ø	291.55	-.Ø28	28.893	34.625	27.833	1453.4
288.Ø	292.65	-.Ø27	28.893	34.623	27.832	1453.4
289.Ø	293.65	-.Ø27	28.894	34.623	27.832	1453.5
29Ø.Ø	294.65	-.Ø26	28.895	34.623	27.832	1453.5
291.Ø	295.7Ø	-.Ø27	28.896	34.625	27.833	1453.5
292.Ø	296.7Ø	-.Ø26	28.896	34.624	27.833	1453.5
293.Ø	297.7Ø	-.Ø27	28.897	34.626	27.834	1453.5
294.Ø	298.75	-.Ø26	28.898	34.624	27.833	1453.5
295.Ø	299.75	-.Ø26	28.898	34.625	27.833	1453.6
296.Ø	3ØØ.75	-.Ø26	28.9ØØ	34.626	27.834	1453.6
297.Ø	3Ø1.85	-.Ø25	28.9Ø1	34.625	27.834	1453.6
298.Ø	3Ø2.8Ø	-.Ø25	28.9Ø2	34.626	27.834	1453.6
299.Ø	3Ø3.85	-.Ø24	28.9Ø3	34.626	27.834	1453.6
3ØØ.Ø	3Ø4.9Ø	-.Ø24	28.9Ø4	34.626	27.835	1453.7
3Ø1.Ø	3Ø5.85	-.Ø23	28.9Ø5	34.627	27.835	1453.7
3Ø2.Ø	3Ø6.9Ø	-.Ø23	28.9Ø7	34.628	27.836	1453.7
3Ø3.Ø	3Ø7.95	-.Ø21	28.9Ø8	34.626	27.834	1453.7
3Ø4.Ø	3Ø8.9Ø	-.Ø21	28.9Ø9	34.627	27.835	1453.7
3Ø5.Ø	3Ø9.95	-.Ø2Ø	28.91Ø	34.627	27.835	1453.8
3Ø6.Ø	311.ØØ	-.Ø2Ø	28.91Ø	34.627	27.835	1453.8
3Ø7.Ø	311.95	-.Ø19	28.912	34.628	27.835	1453.8
3Ø8.Ø	313.ØØ	-.Ø2Ø	28.912	34.628	27.836	1453.8
3Ø9.Ø	314.Ø5	-.Ø2Ø	28.912	34.628	27.836	1453.8
31Ø.Ø	315.ØØ	-.Ø2Ø	28.913	34.628	27.836	1453.8
311.Ø	316.Ø5	-.Ø2Ø	28.914	34.629	27.836	1453.9
312.Ø	317.1Ø	-.Ø19	28.915	34.628	27.836	1453.9
313.Ø	318.ØØ	-.Ø19	28.916	34.629	27.837	1453.9
314.Ø	319.1Ø	-.Ø19	28.916	34.629	27.837	1453.9
315.Ø	32Ø.15	-.Ø18	28.917	34.629	27.836	1453.9
316.Ø	321.1Ø	-.Ø18	28.918	34.629	27.836	1454.Ø
317.Ø	322.1Ø	-.Ø18	28.919	34.63Ø	27.837	1454.Ø
318.Ø	323.2Ø	-.Ø17	28.92Ø	34.63Ø	27.837	1454.Ø
319.Ø	324.15	-.Ø16	28.921	34.629	27.837	1454.Ø
32Ø.Ø	325.15	-.Ø16	28.922	34.63Ø	27.837	1454.Ø
321.Ø	326.25	-.Ø16	28.923	34.63Ø	27.837	1454.1
322.Ø	327.2Ø	-.Ø16	28.924	34.631	27.838	1454.1
323.Ø	328.2Ø	-.Ø15	28.924	34.63Ø	27.837	1454.1
324.Ø	329.25	-.Ø16	28.925	34.632	27.838	1454.1
325.Ø	33Ø.3Ø	-.Ø15	28.926	34.631	27.838	1454.1
326.Ø	331.25	-.Ø15	28.926	34.631	27.837	1454.1
327.Ø	332.35	-.Ø14	28.928	34.631	27.838	1454.2
328.Ø	333.3Ø	-.Ø13	28.928	34.63Ø	27.837	1454.2
329.Ø	334.35	-.Ø13	28.929	34.631	27.838	1454.2
33Ø.Ø	335.35	-.Ø14	28.929	34.632	27.838	1454.2

EXPERIMENT 2310

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
197.Ø	2ØØ.Ø5	-.279	28.478	34.4Ø9	27.671	145Ø.5
198.Ø	2Ø1.Ø5	-.272	28.492	34.419	27.679	145Ø.5
199.Ø	2Ø2.15	-.261	28.5Ø6	34.425	27.684	145Ø.6
2ØØ.Ø	2Ø3.Ø5	-.251	28.521	34.433	27.689	145Ø.7
2Ø1.Ø	2Ø4.15	-.243	28.537	34.445	27.699	145Ø.8
2Ø2.Ø	2Ø5.1Ø	-.234	28.549	34.45Ø	27.7Ø3	145Ø.8
2Ø3.Ø	2Ø6.2Ø	-.222	28.562	34.453	27.7Ø4	145Ø.9
2Ø4.Ø	2Ø7.15	-.192	28.6Ø7	34.479	27.724	1451.1
2Ø5.Ø	2Ø8.2Ø	-.169	28.639	34.494	27.735	1451.2
2Ø6.Ø	2Ø9.25	-.151	28.667	34.511	27.748	1451.4
2Ø7.Ø	21Ø.15	-.136	28.694	34.529	27.762	1451.5
2Ø8.Ø	211.25	-.126	28.7Ø8	34.537	27.767	1451.5
2Ø9.Ø	212.2Ø	-.115	28.725	34.546	27.774	1451.6
21Ø.Ø	213.25	-.1Ø6	28.738	34.552	27.779	1451.7
211.Ø	214.3Ø	-.1ØØ	28.749	34.559	27.784	1451.7
212.Ø	215.3Ø	-.Ø95	28.758	34.565	27.789	1451.8
213.Ø	216.4Ø	-.Ø91	28.765	34.569	27.792	1451.8
214.Ø	217.35	-.Ø87	28.772	34.574	27.795	1451.9
215.Ø	218.4Ø	-.Ø84	28.776	34.575	27.796	1451.9
216.Ø	219.4Ø	-.Ø82	28.78Ø	34.578	27.798	1451.9
217.Ø	22Ø.4Ø	-.Ø79	28.784	34.58Ø	27.8ØØ	1452.Ø
218.Ø	221.45	-.Ø76	28.79Ø	34.583	27.8Ø2	1452.Ø
219.Ø	222.45	-.Ø74	28.794	34.585	27.8Ø4	1452.Ø
22Ø.Ø	223.5Ø	-.Ø73	28.796	34.586	27.8Ø4	1452.Ø
221.Ø	224.5Ø	-.Ø72	28.797	34.587	27.8Ø5	1452.1
222.Ø	225.45	-.Ø72	28.799	34.589	27.8Ø6	1452.1
223.Ø	226.55	-.Ø7Ø	28.8Ø1	34.588	27.8Ø6	1452.1
224.Ø	227.55	-.Ø7Ø	28.8Ø2	34.589	27.8Ø7	1452.1
225.Ø	228.5Ø	-.Ø69	28.8Ø4	34.59Ø	27.8Ø7	1452.2
226.Ø	229.65	-.Ø69				
227.Ø	23Ø.6Ø	-.Ø68				
228.Ø	231.6Ø	-.Ø68	28.8Ø8	34.591	27.8Ø9	1452.2
229.Ø	232.65	-.Ø67	28.8Ø9	34.591	27.8Ø8	1452.2
23Ø.Ø	233.6Ø	-.Ø67				
231.Ø	234.65	-.Ø67				
232.Ø	235.7Ø	-.Ø67	28.812	34.594	27.81Ø	1452.3
233.Ø	236.7Ø	-.Ø65	28.813	34.592	27.8Ø9	1452.3
234.Ø	237.75	-.Ø65	28.814	34.593	27.81Ø	1452.3
235.Ø	238.75	-.Ø64	28.816	34.594	27.81Ø	1452.3
236.Ø	239.7Ø	-.Ø64	28.816	34.594	27.81Ø	1452.4
237.Ø	24Ø.75	-.Ø64	28.818	34.595	27.811	1452.4
238.Ø	241.75	-.Ø63	28.819	34.595	27.811	1452.4
239.Ø	242.75	-.Ø62	28.821	34.596	27.812	1452.4
24Ø.Ø	243.8Ø	-.Ø61	28.823	34.596	27.812	1452.4
241.Ø	244.85	-.Ø6Ø	28.826	34.598	27.814	1452.5
242.Ø	245.8Ø	-.Ø59	28.827	34.599	27.814	1452.5
243.Ø	246.85	-.Ø58	28.829	34.599	27.815	1452.5
244.Ø	247.9Ø	-.Ø57	28.83Ø	34.6ØØ	27.815	1452.5
245.Ø	248.85	-.Ø57	28.831	34.6ØØ	27.815	1452.6
246.Ø	249.85	-.Ø57	28.833	34.6Ø2	27.817	1452.6
247.Ø	25Ø.95	-.Ø54	28.836	34.6Ø2	27.816	1452.6
248.Ø	251.9Ø	-.Ø54	28.837	34.6Ø3	27.817	1452.6
249.Ø	252.9Ø	-.Ø53	28.84Ø	34.6Ø4	27.818	1452.6
25Ø.Ø	253.95	-.Ø52	28.842	34.6Ø5	27.819	1452.7
251.Ø	254.95	-.Ø51	28.843	34.6Ø5	27.819	1452.7
252.Ø	255.95	-.Ø5Ø	28.846	34.6Ø8	27.821	1452.7
253.Ø	257.Ø5	-.Ø48	28.848	34.6Ø7	27.82Ø	1452.7
254.Ø	258.1Ø	-.Ø48	28.849	34.6Ø9	27.821	1452.8
255.Ø	259.Ø5	-.Ø47	28.851	34.6Ø9	27.822	1452.8
256.Ø	26Ø.1Ø	-.Ø47	28.853	34.611	27.823	1452.8
257.Ø	261.15	-.Ø45	28.855	34.611	27.823	1452.8
258.Ø	262.1Ø	-.Ø45	28.856	34.611	27.823	1452.8
259.Ø	263.1Ø	-.Ø44	28.857	34.611	27.823	1452.9
26Ø.Ø	264.2Ø	-.Ø44	28.858	34.612	27.824	1452.9
261.Ø	265.2Ø	-.Ø43	28.859	34.612	27.824	1452.9
262.Ø	266.15	-.Ø43	28.86Ø	34.612	27.824	1452.9
263.Ø	267.2Ø	-.Ø43	28.861	34.614	27.825	1452.9

EXPERIMENT 2310

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
264.Ø	268.15	-.Ø43	28.862	34.614	27.825	1453.Ø
265.Ø	269.25	-.Ø42	28.863	34.614	27.825	1453.Ø
266.Ø	27Ø.25	-.Ø41	28.865	34.615	27.826	1453.Ø
267.Ø	271.3Ø	-.Ø4Ø	28.866	34.614	27.826	1453.Ø
268.Ø	272.3Ø	-.Ø4Ø	28.867	34.615	27.826	1453.Ø
269.Ø	273.25	-.Ø39	28.869	34.616	27.827	1453.1
27Ø.Ø	274.35	-.Ø37	28.871	34.616	27.827	1453.1
271.Ø	275.35	-.Ø37	28.872	34.616	27.827	1453.1
272.Ø	276.35	-.Ø36	28.874	34.617	27.828	1453.1
273.Ø	277.4Ø	-.Ø35	28.875	34.617	27.827	1453.1
274.Ø	278.35	-.Ø35	28.876	34.618	27.828	1453.2
275.Ø	279.45	-.Ø34	28.878	34.619	27.829	1453.2
276.Ø	28Ø.4Ø	-.Ø33	28.88Ø	34.619	27.829	1453.2
277.Ø	281.45	-.Ø32	28.881	34.619	27.829	1453.2
278.Ø	282.45	-.Ø32	28.883	34.621	27.83Ø	1453.2
279.Ø	283.4Ø	-.Ø32	28.884	34.622	27.831	1453.3
28Ø.Ø	284.5Ø	-.Ø29	28.885	34.619	27.829	1453.3
281.Ø	285.5Ø	-.Ø29	28.887	34.621	27.831	1453.3
282.Ø	286.45	-.Ø29	28.889	34.623	27.832	1453.3
283.Ø	287.55	-.Ø28	28.889	34.622	27.831	1453.4
284.Ø	288.5Ø	-.Ø28	28.89Ø	34.622	27.832	1453.4
285.Ø	289.6Ø	-.Ø28	28.891	34.623	27.832	1453.4
286.Ø	29Ø.6Ø	-.Ø27	28.891	34.622	27.831	1453.4
287.Ø	291.55	-.Ø28	28.893	34.625	27.833	1453.4
288.Ø	292.65	-.Ø27	28.893	34.623	27.832	1453.4
289.Ø	293.65	-.Ø27	28.894	34.623	27.832	1453.5
29Ø.Ø	294.65	-.Ø26	28.895	34.623	27.832	1453.5
291.Ø	295.7Ø	-.Ø27	28.896	34.625	27.833	1453.5
292.Ø	296.7Ø	-.Ø26	28.896	34.624	27.833	1453.5
293.Ø	297.7Ø	-.Ø27	28.897	34.626	27.834	1453.5
294.Ø	298.75	-.Ø26	28.898	34.624	27.833	1453.5
295.Ø	299.75	-.Ø26	28.898	34.625	27.833	1453.6
296.Ø	3ØØ.75	-.Ø26	28.9ØØ	34.626	27.834	1453.6
297.Ø	3Ø1.85	-.Ø25	28.9Ø1	34.625	27.834	1453.6
298.Ø	3Ø2.8Ø	-.Ø25	28.9Ø2	34.626	27.834	1453.6
299.Ø	3Ø3.85	-.Ø24	28.9Ø3	34.626	27.834	1453.6
3ØØ.Ø	3Ø4.9Ø	-.Ø24	28.9Ø4	34.626	27.835	1453.7
3Ø1.Ø	3Ø5.85	-.Ø23	28.9Ø5	34.627	27.835	1453.7
3Ø2.Ø	3Ø6.9Ø	-.Ø23	28.9Ø7	34.628	27.836	1453.7
3Ø3.Ø	3Ø7.95	-.Ø21	28.9Ø8	34.626	27.834	1453.7
3Ø4.Ø	3Ø8.9Ø	-.Ø21	28.9Ø9	34.627	27.835	1453.7
3Ø5.Ø	3Ø9.95	-.Ø2Ø	28.91Ø	34.627	27.835	1453.8
3Ø6.Ø	311.ØØ	-.Ø2Ø	28.91Ø	34.627	27.835	1453.8
3Ø7.Ø	311.95	-.Ø19	28.912	34.628	27.835	1453.8
3Ø8.Ø	313.ØØ	-.Ø2Ø	28.912	34.628	27.836	1453.8
3Ø9.Ø	314.Ø5	-.Ø2Ø	28.912	34.628	27.836	1453.8
31Ø.Ø	315.ØØ	-.Ø2Ø	28.913	34.628	27.836	1453.8
311.Ø	316.Ø5	-.Ø2Ø	28.914	34.629	27.836	1453.9
312.Ø	317.1Ø	-.Ø19	28.915	34.628	27.836	1453.9
313.Ø	318.ØØ	-.Ø19	28.916	34.629	27.837	1453.9
314.Ø	319.1Ø	-.Ø19	28.916	34.629	27.837	1453.9
315.Ø	32Ø.15	-.Ø18	28.917	34.629	27.836	1453.9
316.Ø	321.1Ø	-.Ø18	28.918	34.629	27.836	1454.Ø
317.Ø	322.1Ø	-.Ø18	28.919	34.63Ø	27.837	1454.Ø
318.Ø	323.2Ø	-.Ø17	28.92Ø	34.63Ø	27.837	1454.Ø
319.Ø	324.15	-.Ø16	28.921	34.629	27.837	1454.Ø
32Ø.Ø	325.15	-.Ø16	28.922	34.63Ø	27.837	1454.Ø
321.Ø	326.25	-.Ø16	28.923	34.63Ø	27.837	1454.1
322.Ø	327.2Ø	-.Ø16	28.924	34.631	27.838	1454.1
323.Ø	328.2Ø	-.Ø15	28.924	34.63Ø	27.837	1454.1
324.Ø	329.25	-.Ø16	28.925	34.632	27.838	1454.1
325.Ø	33Ø.3Ø	-.Ø15	28.926	34.631	27.838	1454.1
326.Ø	331.25	-.Ø15	28.926	34.631	27.837	1454.1
327.Ø	332.35	-.Ø14	28.928	34.631	27.838	1454.2
328.Ø	333.3Ø	-.Ø13	28.928	34.63Ø	27.837	1454.2
329.Ø	334.35	-.Ø13	28.929	34.631	27.838	1454.2
33Ø.Ø	335.35	-.Ø14	28.929	34.632	27.838	1454.2

EXPERIMENT 2310

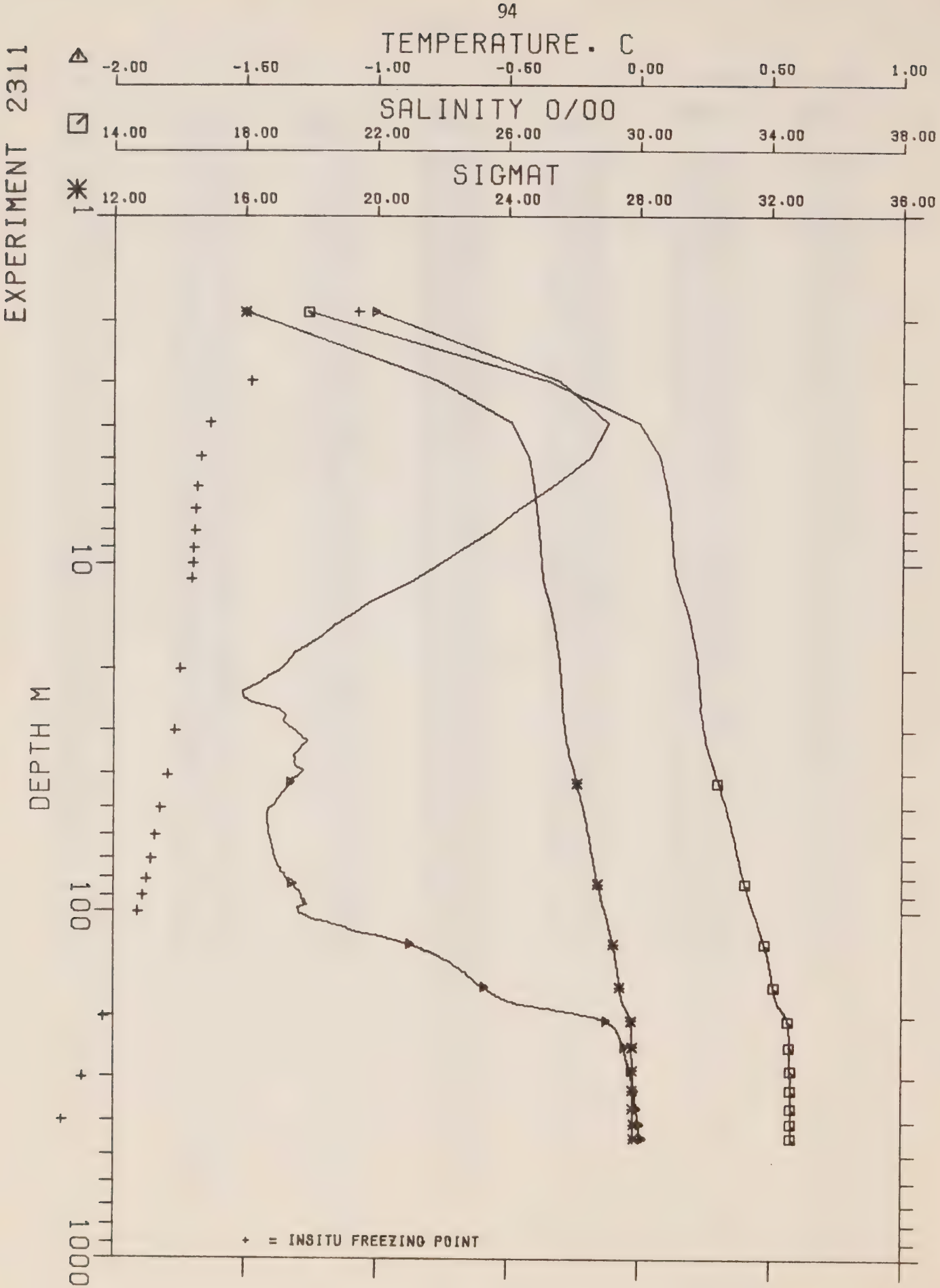
DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
331.Ø	336.35	-.Ø13	28.93Ø	34.631	27.838	1454.2
332.Ø	337.45	-.Ø13	28.931	34.632	27.838	1454.3
333.Ø	338.4Ø	-.Ø13	28.932	34.632	27.838	1454.3
334.Ø	339.45	-.Ø13	28.933	34.633	27.839	1454.3
335.Ø	34Ø.45	-.Ø13	28.934	34.633	27.84Ø	1454.3
336.Ø	341.5Ø	-.Ø13	28.934	34.633	27.84Ø	1454.3
337.Ø	342.5Ø	-.Ø12	28.935	34.632	27.839	1454.3
338.Ø	343.5Ø	-.Ø11	28.936	34.633	27.839	1454.4
339.Ø	344.55	-.Ø11	28.937	34.633	27.839	1454.4
34Ø.Ø	345.55	-.Ø11	28.937	34.633	27.839	1454.4
341.Ø	346.6Ø	-.Ø11	28.938	34.633	27.839	1454.4
342.Ø	347.6Ø	-.Ø11	28.939	34.634	27.84Ø	1454.4
343.Ø	348.6Ø	-.Ø1Ø	28.94Ø	34.634	27.84Ø	1454.5
344.Ø	349.65	-.Ø1Ø	28.94Ø	34.633	27.839	1454.5
345.Ø	35Ø.65	-.Ø1Ø	28.941	34.633	27.839	1454.5
346.Ø	351.7Ø	-.Ø11	28.941	34.634	27.84Ø	1454.5
347.Ø	352.7Ø	-.Ø1Ø	28.941	34.632	27.839	1454.5
348.Ø	353.75	-.Ø1Ø	28.943	34.634	27.84Ø	1454.5
349.Ø	354.7Ø	-.ØØ9	28.943	34.633	27.839	1454.6
35Ø.Ø	355.7Ø	-.ØØ9	28.944	34.633	27.84Ø	1454.6
351.Ø	356.8Ø	-.ØØ9	28.945	34.634	27.84Ø	1454.6
352.Ø	357.75	-.ØØ9	28.945	34.634	27.84Ø	1454.6
353.Ø	358.8Ø	-.ØØ9	28.946	34.634	27.84Ø	1454.6
354.Ø	359.8Ø	-.ØØ8	28.947	34.633	27.839	1454.6
355.Ø	36Ø.8Ø	-.ØØ9	28.948	34.635	27.841	1454.7
356.Ø	361.85	-.ØØ7	28.948	34.633	27.839	1454.7
357.Ø	362.8Ø	-.ØØ9	28.949	34.636	27.842	1454.7
358.Ø	363.85	-.ØØ8	28.95Ø	34.635	27.841	1454.7
359.Ø	364.85	-.ØØ7	28.95Ø	34.634	27.84Ø	1454.7
36Ø.Ø	365.85	-.ØØ7	28.952	34.636	27.841	1454.8
361.Ø	366.95	-.ØØ7	28.952	34.636	27.841	1454.8
362.Ø	367.9Ø	-.ØØ6	28.952	34.634	27.84Ø	1454.8
363.Ø	368.95	-.ØØ7	28.953	34.636	27.841	1454.8
364.Ø	369.95	-.ØØ6	28.955	34.636	27.841	1454.8
365.Ø	37Ø.95	-.ØØ5	28.955	34.635	27.841	1454.8
366.Ø	372.ØØ	-.ØØ4	28.956	34.635	27.84Ø	1454.9
367.Ø	373.ØØ	-.ØØ4	28.957	34.635	27.841	1454.9
368.Ø	374.Ø5	-.ØØ4	28.958	34.636	27.841	1454.9
369.Ø	375.1Ø	-.ØØ4	28.959	34.636	27.841	1454.9
37Ø.Ø	376.Ø5	-.ØØ4	28.959	34.636	27.841	1454.9
371.Ø	377.15	-.ØØ4	28.96Ø	34.636	27.841	1455.Ø
372.Ø	378.1Ø	-.ØØ4	28.961	34.637	27.842	1455.Ø
373.Ø	379.15	-.ØØ4	28.961	34.636	27.841	1455.Ø
374.Ø	38Ø.2Ø	-.ØØ4	28.961	34.636	27.841	1455.Ø
375.Ø	381.15	-.ØØ4	28.962	34.637	27.842	1455.Ø
376.Ø	382.25	-.ØØ3	28.963	34.636	27.841	1455.Ø
377.Ø	383.2Ø	-.ØØ4	28.964	34.638	27.843	1455.1
378.Ø	384.25	-.ØØ3	28.964	34.637	27.842	1455.1
379.Ø	385.25	-.ØØ3	28.965	34.637	27.842	1455.1
38Ø.Ø	386.3Ø	-.ØØ2	28.966	34.636	27.841	1455.1
381.Ø	387.35	-.ØØ2	28.966	34.636	27.841	1455.1
382.Ø	388.3Ø	-.ØØ2	28.967	34.637	27.842	1455.1
383.Ø	389.35	-.ØØ2	28.968	34.637	27.842	1455.2
384.Ø	39Ø.35	-.ØØ2	28.968	34.636	27.842	1455.2
385.Ø	391.35	-.ØØ2	28.969	34.637	27.842	1455.2
386.Ø	392.45	-.ØØ2	28.969	34.637	27.842	1455.2
387.Ø	393.35	-.ØØ2	28.969	34.637	27.842	1455.2
388.Ø	394.45	-.ØØ1	28.969	34.636	27.841	1455.2
389.Ø	395.35	-.ØØ1	28.97Ø	34.636	27.841	1455.3
39Ø.Ø	396.45	-.ØØ1	28.97Ø	34.636	27.841	1455.3
391.Ø	397.4Ø	.ØØØ	28.971	34.635	27.841	1455.3
392.Ø	398.45	-.ØØ1	28.972	34.636	27.842	1455.3
393.Ø	399.45	-.ØØ1	28.973	34.637	27.842	1455.3
394.Ø	4ØØ.45	-.ØØ1	28.973	34.637	27.842	1455.4
395.Ø	4Ø1.55	.ØØØ	28.974	34.637	27.842	1455.4
396.Ø	4Ø2.5Ø	.ØØØ	28.974	34.636	27.841	1455.4
397.Ø	4Ø3.55	.ØØØ	28.976	34.638	27.842	1455.4

EXPERIMENT 2310

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (0/00)	SIGMAT	SOUND (M/SEC)
398.0	404.55	-.001	28.976	34.638	27.843	1455.4
399.0	405.50	-.001	28.976	34.638	27.843	1455.4
400.0	406.65	.000	28.977	34.637	27.842	1455.5
401.0	407.55	.000	28.978	34.638	27.843	1455.5
402.0	408.65	.000	28.978	34.638	27.843	1455.5
403.0	409.65	.001	28.979	34.637	27.842	1455.5
404.0	410.65	.001	28.979	34.637	27.842	1455.5
405.0	411.75	.001	28.981	34.638	27.843	1455.5
406.0	412.65	.001	28.982	34.639	27.843	1455.6
407.0	413.70	.002	28.982	34.637	27.842	1455.6
408.0	414.80	.002	28.982	34.637	27.842	1455.6
409.0	415.75	.002	28.983	34.638	27.843	1455.6
410.0	416.85	.002	28.984	34.638	27.843	1455.6
411.0	417.80	.002	28.984	34.637	27.842	1455.6
412.0	418.80	.002	28.984	34.637	27.842	1455.7
413.0	419.90	.002	28.986	34.639	27.843	1455.7
414.0	420.85	.002	28.985	34.638	27.842	1455.7
415.0	421.90	.002	28.986	34.638	27.843	1455.7
416.0	422.90	.002	28.987	34.638	27.843	1455.7
417.0	423.95	.002	28.988	34.639	27.843	1455.8
418.0	425.00	.003	28.988	34.638	27.842	1455.8
419.0	425.95	.003	28.989	34.638	27.843	1455.8
420.0	427.05	.004	28.989	34.637	27.842	1455.8
421.0	428.00	.003	28.990	34.638	27.843	1455.8
422.0	429.05	.002	28.990	34.639	27.844	1455.8
423.0	430.10	.003	28.991	34.638	27.843	1455.9
424.0	431.05	.004	28.991	34.638	27.842	1455.9
425.0	432.10	.003	28.992	34.639	27.843	1455.9
426.0	433.05	.004	28.993	34.639	27.843	1455.9
427.0	434.05	.005	28.993	34.638	27.842	1455.9
428.0	435.10	.005	28.995	34.639	27.843	1456.0
429.0	436.05	.005	28.995	34.639	27.843	1456.0
430.0	437.15	.005	28.996	34.639	27.843	1456.0
431.0	438.10	.006	28.997	34.639	27.843	1456.0
432.0	439.15	.006	28.998	34.639	27.843	1456.0
433.0	440.20	.007	28.999	34.639	27.843	1456.0
434.0	441.15	.008	28.999	34.638	27.842	1456.1
435.0	442.20	.008	29.000	34.638	27.843	1456.1
436.0	443.20	.008	29.001	34.639	27.843	1456.1
437.0	444.25	.009	29.002	34.639	27.843	1456.1
438.0	445.30	.009	29.003	34.639	27.843	1456.1
439.0	446.20	.010	29.004	34.639	27.843	1456.2
440.0	447.35	.010	29.005	34.639	27.843	1456.2
441.0	448.30	.010	29.005	34.639	27.843	1456.2
442.0	449.35	.010	29.005	34.639	27.843	1456.2
443.0	450.40	.010	29.006	34.639	27.843	1456.2
444.0	451.35	.010	29.007	34.640	27.844	1456.2
445.0	452.45	.011	29.008	34.640	27.843	1456.3
446.0	453.40	.010	29.008	34.640	27.844	1456.3
447.0	454.45	.011	29.009	34.640	27.843	1456.3
448.0	455.45	.010	29.009	34.640	27.844	1456.3
449.0	456.50	.010	29.010	34.640	27.844	1456.3
450.0	457.50	.010	29.010	34.640	27.844	1456.3
451.0	458.50	.011	29.011	34.639	27.843	1456.4
452.0	459.55	.011	29.011	34.639	27.843	1456.4
453.0	460.60	.011	29.012	34.640	27.844	1456.4
454.0	461.55	.011	29.013	34.640	27.844	1456.4
455.0	462.60	.011	29.013	34.639	27.843	1456.4
456.0	463.65	.011	29.014	34.641	27.844	1456.4
457.0	464.65	.012	29.015	34.640	27.843	1456.5
458.0	465.65	.012	29.015	34.640	27.844	1456.5
459.0	466.70	.012	29.015	34.640	27.844	1456.5
460.0	467.70	.013	29.016	34.639	27.843	1456.5
461.0	468.65	.013	29.017	34.640	27.843	1456.5
462.0	469.70	.012	29.017	34.641	27.844	1456.6
463.0	470.75	.013	29.018	34.640	27.843	1456.5
464.0	471.70	.013	29.019	34.640	27.844	1456.6

EXPERIMENT 2310

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
465.Ø	472.7Ø	.Ø13	29.Ø19	34.64Ø	27.843	1456.6
466.Ø	473.8Ø	.Ø13	29.Ø19	34.64Ø	27.843	1456.6
467.Ø	474.7Ø	.Ø13	29.Ø2Ø	34.641	27.844	1456.6
468.Ø	475.75	.Ø14	29.Ø21	34.64Ø	27.844	1456.7
469.Ø	476.85	.Ø13	29.Ø22	34.641	27.845	1456.7
47Ø.Ø	477.75	.Ø14	29.Ø22	34.64Ø	27.844	1456.7
471.Ø	478.85	.Ø14	29.Ø23	34.64Ø	27.844	1456.7
472.Ø	479.9Ø	.Ø14	29.Ø23	34.64Ø	27.843	1456.7
473.Ø	48Ø.85	.Ø14	29.Ø24	34.64Ø	27.844	1456.7
474.Ø	481.9Ø	.Ø14	29.Ø24	34.64Ø	27.844	1456.8
475.Ø	482.95	.Ø15	29.Ø25	34.64Ø	27.844	1456.8
476.Ø	483.9Ø	.Ø15	29.Ø26	34.641	27.844	1456.8
477.Ø	484.95	.Ø16	29.Ø27	34.64Ø	27.843	1456.8
478.Ø	485.95	.Ø16	29.Ø27	34.64Ø	27.843	1456.8
479.Ø	486.95	.Ø16	29.Ø28	34.64Ø	27.844	1456.9
48Ø.Ø	488.ØØ	.Ø16	29.Ø29	34.64Ø	27.844	1456.9
481.Ø	489.Ø5	.Ø16	29.Ø3Ø	34.641	27.844	1456.9
482.Ø	49Ø.ØØ	.Ø16	29.Ø3Ø	34.641	27.844	1456.9
483.Ø	491.1Ø	.Ø17	29.Ø31	34.64Ø	27.844	1456.9
484.Ø	492.Ø5	.Ø17	29.Ø31	34.64Ø	27.844	1456.9
485.Ø	493.1Ø	.Ø16	29.Ø31	34.64Ø	27.844	1457.Ø
486.Ø	494.2Ø	.Ø16	29.Ø32	34.641	27.844	1457.Ø
487.Ø	495.15	.Ø16	29.Ø32	34.641	27.844	1457.Ø
488.Ø	496.25	.Ø18	29.Ø33	34.639	27.843	1457.Ø
489.Ø	497.2Ø	.Ø18	29.Ø35	34.641	27.844	1457.Ø
49Ø.Ø	498.25	.Ø18	29.Ø35	34.64Ø	27.843	1457.Ø
491.Ø	499.3Ø	.Ø18	29.Ø35	34.64Ø	27.844	1457.1
492.Ø	5ØØ.25	.Ø18	29.Ø36	34.64Ø	27.844	1457.1
493.Ø	5Ø1.35	.Ø18	29.Ø37	34.641	27.844	1457.1
494.Ø	5Ø2.3Ø	.Ø19	29.Ø38	34.64Ø	27.844	1457.1
495.Ø	5Ø3.3Ø	.Ø19	29.Ø39	34.641	27.844	1457.1
496.Ø	5Ø4.4Ø	.Ø19	29.Ø39	34.641	27.844	1457.2
497.Ø	5Ø5.35	.Ø19	29.Ø39	34.641	27.844	1457.2
498.Ø	5Ø6.35	.Ø19	29.Ø4Ø	34.641	27.844	1457.2
499.Ø	5Ø7.4Ø	.Ø19	29.Ø4Ø	34.64Ø	27.843	1457.2
5ØØ.Ø	5Ø8.4Ø	.Ø19	29.Ø4Ø	34.64Ø	27.844	1457.2
5Ø1.Ø	5Ø9.45	.Ø19	29.Ø41	34.641	27.844	1457.2
5Ø2.Ø	51Ø.4Ø	.Ø19	29.Ø42	34.641	27.844	1457.3
5Ø3.Ø	511.45	.Ø19	29.Ø42	34.641	27.844	1457.3
5Ø4.Ø	512.4Ø	.Ø19	29.Ø42	34.641	27.844	1457.3
5Ø5.Ø	513.5Ø	.Ø2Ø	29.Ø43	34.64Ø	27.843	1457.3
5Ø6.Ø	514.4Ø	.Ø19	29.Ø43	34.641	27.844	1457.3
5Ø7.Ø	515.5Ø	.Ø2Ø	29.Ø43	34.639	27.843	1457.3
5Ø8.Ø	516.55	.Ø2Ø	29.Ø44	34.64Ø	27.843	1457.4
5Ø9.Ø	517.5Ø	.Ø2Ø	29.Ø45	34.64Ø	27.844	1457.4
51Ø.Ø	518.55	.Ø2Ø	29.Ø46	34.641	27.844	1457.4
511.Ø	519.5Ø	.Ø2Ø	29.Ø46	34.641	27.844	1457.4
512.Ø	52Ø.6Ø	.Ø2Ø	29.Ø47	34.641	27.844	1457.4
513.Ø	521.6Ø	.Ø21	29.Ø48	34.641	27.844	1457.4


EXPERIMENT 2311
TEMPERATURE. C
-2.00
-1.60
-1.00
-0.60
0.00
0.60
1.00
SALINITY O/OO
14.00
18.00
22.00
26.00
30.00
34.00
38.00
SIGMAT
12.00
16.00
20.00
24.00
28.00
32.00
36.00
DEPTH M
10
100
1000
+ = INSITU FREEZING POINT

CRUISE 15-77-22 D'IBERVILLE-77 SITE STN1Ø EXPERIMENT 2311

LAT.N. 8Ø-34-4Ø LONG.W. 79-22-3Ø DATE Ø32777 G.M.T. 191Ø

ICE THICKNESS 1.17 M DEPTH INCR 1.ØØ WATER DEPTH 464 M

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
1.Ø	.9Ø	-1.Ø43	16.354	19.293	15.5ØØ	1422.8
2.Ø	1.9Ø	-1.Ø13	16.835	19.891	15.982	1423.7
3.Ø	3.ØØ	-.3Ø7	22.895	27.185	21.851	1437.1
4.Ø	3.95	-.12Ø	25.164	29.969	24.Ø87	1441.8
5.Ø	4.95	-.188	25.58Ø	3Ø.581	24.582	1442.4
6.Ø	6.Ø5	-.341	25.642	3Ø.816	24.776	1442.Ø
7.Ø	7.ØØ	-.464	25.616	3Ø.9Ø6	24.853	1441.6
8.Ø	8.Ø5	-.572	25.578	3Ø.964	24.9Ø4	1441.2
9.Ø	9.Ø5	-.676	25.539	31.Ø18	24.95Ø	144Ø.8
1Ø.Ø	1Ø.ØØ	-.767	25.5ØØ	31.Ø59	24.986	144Ø.4
11.Ø	11.1Ø	-.861	25.478	31.124	25.Ø42	144Ø.1
12.Ø	12.Ø5	-.949	25.495	31.238	25.136	1439.8
13.Ø	13.Ø5	-1.Ø34	25.528	31.37Ø	25.245	1439.6
14.Ø	14.1Ø	-1.Ø98	25.555	31.472	25.329	1439.5
15.Ø	15.Ø5	-1.165	25.572	31.565	25.4Ø6	1439.3
16.Ø	16.1Ø	-1.211	25.575	31.617	25.449	1439.2
17.Ø	17.1Ø	-1.267	25.572	31.671	25.494	1439.Ø
18.Ø	18.1Ø	-1.315	25.566	31.713	25.529	1438.9
19.Ø	19.2Ø	-1.34Ø	25.572	31.747	25.557	1438.8
2Ø.Ø	2Ø.1Ø	-1.37Ø	25.569	31.774	25.58Ø	1438.7
21.Ø	21.15	-1.416	25.551	31.797	25.599	1438.6
22.Ø	22.15	-1.457	25.528	31.8Ø8	25.6Ø9	1438.4
23.Ø	23.15	-1.5Ø9	25.5Ø8	31.836	25.633	1438.2
24.Ø	24.2Ø	-1.5Ø3	25.518	31.843	25.638	1438.3
25.Ø	25.15	-1.473	25.555	31.86Ø	25.652	1438.5
26.Ø	26.25	-1.372	25.632	31.859	25.648	1439.Ø
27.Ø	27.2Ø	-1.347	25.676	31.891	25.674	1439.1
28.Ø	28.25	-1.357	25.686	31.915	25.694	1439.1
29.Ø	29.25	-1.335	25.718	31.935	25.7Ø9	1439.3
3Ø.Ø	3Ø.25	-1.3Ø5	25.761	31.961	25.73Ø	1439.5
31.Ø	31.3Ø	-1.286	25.796	31.988	25.751	1439.6
32.Ø	32.25	-1.263	25.834	32.Ø15	25.772	1439.8
33.Ø	33.3Ø	-1.283	25.851	32.Ø59	25.8Ø8	1439.8
34.Ø	34.3Ø	-1.294	25.864	32.Ø88	25.832	1439.8
35.Ø	35.35	-1.313	25.871	32.117	25.856	1439.7
36.Ø	36.3Ø	-1.3Ø9	25.9Ø6	32.161	25.891	1439.8
37.Ø	37.35	-1.315	25.935	32.2Ø6	25.928	1439.9
38.Ø	38.35	-1.3Ø7	25.973	32.249	25.962	144Ø.Ø
39.Ø	39.35	-1.282	26.Ø28	32.296	26.ØØØ	144Ø.2
4Ø.Ø	4Ø.45	-1.3ØØ	26.Ø4Ø	32.331	26.Ø29	144Ø.2
41.Ø	41.4Ø	-1.321	26.Ø48	32.364	26.Ø56	144Ø.1
42.Ø	42.45	-1.331	26.Ø64	32.397	26.Ø83	144Ø.2
43.Ø	43.4Ø	-1.342	26.Ø81	32.431	26.111	144Ø.2
44.Ø	44.5Ø	-1.35Ø	26.Ø98	32.462	26.136	144Ø.2
45.Ø	45.45	-1.361	26.113	32.494	26.162	144Ø.2
46.Ø	46.5Ø	-1.371	26.13Ø	32.528	26.19Ø	144Ø.2
47.Ø	47.45	-1.381	26.147	32.562	26.217	144Ø.2
48.Ø	48.5Ø	-1.387	26.163	32.589	26.24Ø	144Ø.3
49.Ø	49.5Ø	-1.395	26.18Ø	32.62Ø	26.265	144Ø.3
5Ø.Ø	5Ø.55	-1.411	26.189	32.649	26.289	144Ø.3
51.Ø	51.55	-1.415	26.2Ø3	32.672	26.3Ø8	144Ø.3
52.Ø	52.6Ø	-1.415	26.221	32.696	26.327	144Ø.4
53.Ø	53.6Ø	-1.414	26.242	32.724	26.35Ø	144Ø.4
54.Ø	54.55	-1.414	26.259	32.746	26.368	144Ø.5
55.Ø	55.6Ø	-1.414	26.275	32.768	26.385	144Ø.5
56.Ø	56.65	-1.412	26.291	32.788	26.4Ø1	144Ø.6
57.Ø	57.7Ø	-1.411	26.3Ø6	32.8Ø6	26.417	144Ø.6
58.Ø	58.65	-1.411	26.322	32.828	26.434	144Ø.7
59.Ø	59.7Ø	-1.4Ø9	26.337	32.845	26.448	144Ø.7
6Ø.Ø	6Ø.65	-1.4Ø7	26.351	32.863	26.462	144Ø.8
61.Ø	61.7Ø	-1.4Ø3	26.369	32.882	26.477	144Ø.8
62.Ø	62.7Ø	-1.4Ø2	26.386	32.9Ø4	26.495	144Ø.9

EXPERIMENT 2311

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
63.Ø	63.7Ø	-1.4ØØ	26.4ØØ	32.919	26.5Ø8	144Ø.9
64.Ø	64.75	-1.397	26.411	32.931	26.517	1441.Ø
65.Ø	65.7Ø	-1.395	26.424	32.947	26.53Ø	1441.Ø
66.Ø	66.8Ø	-1.392	26.437	32.96Ø	26.54Ø	1441.1
67.Ø	67.75	-1.392	26.452	32.98Ø	26.556	1441.1
68.Ø	68.8Ø	-1.39Ø	26.465	32.995	26.569	1441.2
69.Ø	69.8Ø	-1.386	26.479	33.Ø1Ø	26.581	1441.2
7Ø.Ø	7Ø.8Ø	-1.386	26.492	33.Ø27	26.594	1441.3
71.Ø	71.8Ø	-1.381	26.5Ø8	33.Ø42	26.6Ø7	1441.3
72.Ø	72.8Ø	-1.374	26.524	33.Ø56	26.618	1441.4
73.Ø	73.9Ø	-1.373	26.535	33.Ø69	26.628	1441.4
74.Ø	74.85	-1.365	26.551	33.Ø82	26.638	1441.5
75.Ø	75.9Ø	-1.366	26.561	33.Ø96	26.65Ø	1441.5
76.Ø	76.85	-1.363	26.574	33.111	26.662	1441.6
77.Ø	77.9Ø	-1.352	26.595	33.126	26.674	1441.7
78.Ø	78.9Ø	-1.349	26.6Ø9	33.141	26.686	1441.7
79.Ø	79.95	-1.344	26.621	33.153	26.695	1441.8
8Ø.Ø	8Ø.9Ø	-1.339	26.638	33.169	26.7Ø9	1441.8
81.Ø	81.95	-1.333	26.656	33.187	26.723	1441.9
82.Ø	82.95	-1.324	26.678	33.2Ø6	26.738	1442.Ø
83.Ø	83.95	-1.317	26.697	33.224	26.752	1442.1
84.Ø	85.ØØ	-1.3Ø8	26.719	33.244	26.768	1442.2
85.Ø	86.ØØ	-1.3Ø4	26.735	33.261	26.782	1442.2
86.Ø	87.ØØ	-1.294	26.755	33.276	26.794	1442.3
87.Ø	88.ØØ	-1.292	26.769	33.293	26.8Ø7	1442.4
88.Ø	89.ØØ	-1.286	26.787	33.311	26.821	1442.4
89.Ø	9Ø.Ø5	-1.283	26.8Ø3	33.328	26.835	1442.5
9Ø.Ø	91.1Ø	-1.284	26.813	33.343	26.847	1442.5
91.Ø	92.Ø5	-1.275	26.831	33.356	26.858	1442.6
92.Ø	93.Ø5	-1.272	26.845	33.372	26.871	1442.6
93.Ø	94.Ø5	-1.279	26.854	33.391	26.887	1442.7
94.Ø	95.1Ø	-1.264	26.876	33.4Ø4	26.896	1442.8
95.Ø	96.1Ø	-1.288	26.879	33.435	26.922	1442.7
96.Ø	97.1Ø	-1.299	26.878	33.445	26.931	1442.7
97.Ø	98.15	-1.3Ø1	26.887	33.458	26.941	1442.7
98.Ø	99.15	-1.297	26.9Ø1	33.473	26.953	1442.8
99.Ø	1ØØ.2Ø	-1.296	26.915	33.49Ø	26.967	1442.8
1ØØ.Ø	1Ø1.15	-1.283	26.94Ø	33.51Ø	26.983	1442.9
1Ø1.Ø	1Ø2.25	-1.272	26.963	33.529	26.998	1443.Ø
1Ø2.Ø	1Ø3.2Ø	-1.26Ø	26.987	33.547	27.Ø12	1443.1
1Ø3.Ø	1Ø4.25	-1.249	27.ØØ5	33.559	27.Ø21	1443.2
1Ø4.Ø	1Ø5.2Ø	-1.239	27.Ø25	33.575	27.Ø34	1443.3
1Ø5.Ø	1Ø6.35	-1.226	27.Ø46	33.588	27.Ø44	1443.4
1Ø6.Ø	1Ø7.3Ø	-1.186	27.Ø88	33.6ØØ	27.Ø53	1443.6
1Ø7.Ø	1Ø8.35	-1.163	27.117	33.614	27.Ø63	1443.7
1Ø8.Ø	1Ø9.3Ø	-1.135	27.148	33.624	27.Ø71	1443.9
1Ø9.Ø	11Ø.35	-1.117	27.173	33.638	27.Ø81	1444.Ø
11Ø.Ø	111.35	-1.112	27.191	33.657	27.Ø97	1444.1
111.Ø	112.35	-1.1ØØ	27.21Ø	33.669	27.1Ø5	1444.2
112.Ø	113.45	-1.Ø85	27.232	33.681	27.115	1444.3
113.Ø	114.35	-1.Ø72	27.251	33.693	27.124	1444.4
114.Ø	115.5Ø	-1.Ø39	27.285	33.7Ø1	27.129	1444.6
115.Ø	116.45	-1.Ø15	27.319	33.721	27.145	1444.7
116.Ø	117.55	-.98Ø	27.358	33.733	27.154	1444.9
117.Ø	118.5Ø	-.96Ø	27.387	33.75Ø	27.167	1445.1
118.Ø	119.5Ø	-.95Ø	27.4Ø5	33.763	27.176	1445.1
119.Ø	12Ø.5Ø	-.927	27.43Ø	33.771	27.182	1445.3
12Ø.Ø	121.5Ø	-.9Ø9	27.458	33.788	27.196	1445.4
121.Ø	122.6Ø	-.895	27.478	33.799	27.2Ø4	1445.5
122.Ø	123.5Ø	-.877	27.499	33.8Ø7	27.21Ø	1445.6
123.Ø	124.6Ø	-.86Ø	27.522	33.818	27.218	1445.7
124.Ø	125.6Ø	-.845	27.544	33.83Ø	27.227	1445.8
125.Ø	126.6Ø	-.832	27.565	33.843	27.238	1445.9
126.Ø	127.65	-.82Ø	27.583	33.854	27.246	1446.Ø
127.Ø	128.65	-.81Ø	27.598	33.863	27.252	1446.1
128.Ø	129.6Ø	-.798	27.616	33.874	27.261	1446.2
129.Ø	13Ø.7Ø	-.788	27.632	33.883	27.268	1446.2

EXPERIMENT 2311

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
130.Ø	131.6Ø	-.778	27.647	33.891	27.274	1446.3
131.Ø	132.75	-.769	27.662	33.9Ø1	27.282	1446.4
132.Ø	133.7Ø	-.762	27.674	33.9Ø9	27.288	1446.4
133.Ø	134.75	-.754	27.686	33.916	27.293	1446.5
134.Ø	135.7Ø	-.746	27.699	33.924	27.299	1446.6
135.Ø	136.8Ø	-.737	27.712	33.931	27.3Ø5	1446.6
136.Ø	137.75	-.728	27.728	33.941	27.313	1446.7
137.Ø	138.8Ø	-.719	27.743	33.951	27.321	1446.8
138.Ø	139.8Ø	-.713	27.754	33.959	27.326	1446.8
139.Ø	14Ø.8Ø	-.7Ø9	27.76Ø	33.962	27.329	1446.9
14Ø.Ø	141.85	-.7Ø6	27.767	33.967	27.332	1446.9
141.Ø	142.85	-.7Ø1	27.775	33.972	27.337	1447.Ø
142.Ø	143.9Ø	-.693	27.785	33.976	27.34Ø	1447.Ø
143.Ø	144.9Ø	-.686	27.798	33.984	27.346	1447.1
144.Ø	145.9Ø	-.681	27.8Ø7	33.991	27.351	1447.1
145.Ø	146.85	-.674	27.818	33.997	27.356	1447.2
146.Ø	147.95	-.668	27.83Ø	34.ØØ6	27.362	1447.3
147.Ø	148.9Ø	-.661	27.84Ø	34.Ø12	27.367	1447.3
148.Ø	149.95	-.657	27.849	34.Ø18	27.372	1447.4
149.Ø	15Ø.95	-.653	27.854	34.Ø2Ø	27.374	1447.4
15Ø.Ø	152.ØØ	-.649	27.862	34.Ø26	27.378	1447.4
151.Ø	153.ØØ	-.644	27.87Ø	34.Ø3Ø	27.381	1447.5
152.Ø	154.ØØ	-.64Ø	27.878	34.Ø36	27.386	1447.5
153.Ø	155.Ø5	-.636	27.882	34.Ø37	27.386	1447.6
154.Ø	156.Ø5	-.632	27.89Ø	34.Ø42	27.391	1447.6
155.Ø	157.Ø5	-.627	27.899	34.Ø48	27.395	1447.6
156.Ø	158.Ø5	-.623	27.9Ø5	34.Ø51	27.397	1447.7
157.Ø	159.15	-.62Ø	27.911	34.Ø55	27.4ØØ	1447.7
158.Ø	16Ø.Ø5	-.617	27.917	34.Ø6Ø	27.4Ø4	1447.8
159.Ø	161.15	-.61Ø	27.928	34.Ø65	27.4Ø8	1447.8
16Ø.Ø	162.1Ø	-.6Ø4	27.939	34.Ø73	27.415	1447.9
161.Ø	163.2Ø	-.596	27.951	34.Ø8Ø	27.419	1447.9
162.Ø	164.1Ø	-.593	27.96Ø	34.Ø88	27.426	1448.Ø
163.Ø	165.15	-.587	27.97Ø	34.Ø93	27.43Ø	1448.Ø
164.Ø	166.15	-.581	27.978	34.Ø98	27.433	1448.1
165.Ø	167.2Ø	-.575	27.988	34.1Ø4	27.438	1448.1
166.Ø	168.15	-.571	27.996	34.11Ø	27.443	1448.2
167.Ø	169.2Ø	-.565	28.ØØ8	34.118	27.449	1448.2
168.Ø	17Ø.25	-.559	28.Ø18	34.124	27.453	1448.3
169.Ø	171.2Ø	-.553	28.Ø26	34.128	27.457	1448.3
17Ø.Ø	172.25	-.546	28.Ø36	34.132	27.46Ø	1448.4
171.Ø	173.25	-.543	28.Ø44	34.14Ø	27.466	1448.4
172.Ø	174.3Ø	-.537	28.Ø54	34.146	27.47Ø	1448.5
173.Ø	175.2Ø	-.531	28.Ø65	34.153	27.476	1448.5
174.Ø	176.3Ø	-.523	28.Ø77	34.159	27.481	1448.6
175.Ø	177.3Ø	-.519	28.Ø86	34.167	27.487	1448.6
176.Ø	178.3Ø	-.5Ø8	28.1Ø1	34.174	27.492	1448.7
177.Ø	179.35	-.5Ø1	28.115	34.184	27.5ØØ	1448.8
178.Ø	18Ø.3Ø	-.493	28.129	34.194	27.5Ø7	1448.9
179.Ø	181.35	-.482	28.144	34.2Ø1	27.513	1448.9
18Ø.Ø	182.25	-.47Ø	28.163	34.212	27.521	1449.Ø
181.Ø	183.4Ø	-.456	28.186	34.226	27.532	1449.1
182.Ø	184.4Ø	-.44Ø	28.21Ø	34.24Ø	27.542	1449.2
183.Ø	185.4Ø	-.422	28.239	34.259	27.556	1449.4
184.Ø	186.4Ø	-.4Ø8	28.265	34.277	27.571	1449.5
185.Ø	187.35	-.383	28.3Ø4	34.3Ø1	27.589	1449.6
186.Ø	188.55	-.363	28.335	34.319	27.6Ø3	1449.8
187.Ø	189.5Ø	-.341	28.367	34.336	27.616	1449.9
188.Ø	19Ø.55	-.322	28.399	34.358	27.632	1450.Ø
189.Ø	191.5Ø	-.3Ø2	28.431	34.377	27.646	1450.2
19Ø.Ø	192.5Ø	-.285	28.456	34.391	27.657	1450.3
191.Ø	193.6Ø	-.266	28.483	34.4Ø4	27.667	1450.4
192.Ø	194.6Ø	-.248	28.512	34.422	27.681	1450.5
193.Ø	195.6Ø	-.23Ø	28.541	34.44Ø	27.694	1450.7
194.Ø	196.65	-.215	28.564	34.454	27.7Ø5	1450.8
195.Ø	197.65	-.2ØØ	28.588	34.467	27.715	1450.9
196.Ø	198.65	-.182	28.617	34.485	27.728	1451.Ø

EXPERIMENT 2311

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
197.Ø	199.65	-.168	28.635	34.493	27.734	1451.1
198.Ø	2ØØ.7Ø	-.156	28.652	34.5Ø2	27.741	1451.2
199.Ø	2Ø1.7Ø	-.147	28.667	34.511	27.748	1451.2
2ØØ.Ø	2Ø2.75	-.139	28.679	34.518	27.752	1451.3
2Ø1.Ø	2Ø3.8Ø	-.133	28.691	34.525	27.759	1451.4
2Ø2.Ø	2Ø4.8Ø	-.128	28.698	34.529	27.761	1451.4
2Ø3.Ø	2Ø5.8Ø	-.122	28.7Ø7	34.534	27.765	1451.5
2Ø4.Ø	2Ø6.8Ø	-.116	28.717	34.54Ø	27.769	1451.5
2Ø5.Ø	2Ø7.85	-.1Ø9	28.73Ø	34.548	27.775	1451.6
2Ø6.Ø	2Ø8.8Ø	-.1Ø4	28.738	34.553	27.779	1451.6
2Ø7.Ø	2Ø9.75	-.Ø99	28.744	34.555	27.781	1451.7
2Ø8.Ø	21Ø.85	-.Ø95	28.75Ø	34.557	27.782	1451.7
2Ø9.Ø	211.85	-.Ø93	28.756	34.563	27.786	1451.7
21Ø.Ø	212.85	-.Ø89	28.761	34.564	27.787	1451.8
211.Ø	213.9Ø	-.Ø87	28.765	34.567	27.79Ø	1451.8
212.Ø	214.9Ø	-.Ø86	28.768	34.569	27.791	1451.8
213.Ø	215.8Ø	-.Ø84	28.771	34.57Ø	27.792	1451.8
214.Ø	216.95	-.Ø82	28.775	34.572	27.794	1451.9
215.Ø	217.9Ø	-.Ø81	28.777	34.574	27.795	1451.9
216.Ø	219.ØØ	-.ØØØ	28.781	34.576	27.797	1451.9
217.Ø	22Ø.ØØ	-.Ø79	28.783	34.578	27.798	1451.9
218.Ø	221.ØØ	-.Ø76	28.785	34.577	27.797	1452.Ø
219.Ø	222.Ø5	-.Ø75	28.788	34.579	27.799	1452.Ø
22Ø.Ø	223.1Ø	-.Ø74	28.79Ø	34.579	27.799	1452.Ø
221.Ø	224.15	-.Ø72	28.793	34.581	27.8ØØ	1452.1
222.Ø	225.1Ø	-.Ø72	28.795	34.582	27.8Ø1	1452.1
223.Ø	226.15	-.Ø7Ø	28.797	34.582	27.8Ø1	1452.1
224.Ø	227.15	-.Ø69	28.798	34.583	27.8Ø2	1452.1
225.Ø	228.2Ø	-.Ø69	28.8ØØ	34.585	27.8Ø3	1452.1
226.Ø	229.15	-.Ø67	28.8Ø2	34.585	27.8Ø3	1452.2
227.Ø	23Ø.25	-.Ø67	28.8Ø4	34.587	27.8Ø5	1452.2
228.Ø	231.2Ø	-.Ø65	28.8Ø6	34.586	27.8Ø4	1452.2
229.Ø	232.15	-.Ø65	28.8Ø8	34.588	27.8Ø5	1452.2
23Ø.Ø	233.15	-.Ø64	28.8Ø9	34.588	27.8Ø6	1452.2
231.Ø	234.15	-.Ø63	28.811	34.589	27.8Ø6	1452.3
232.Ø	235.25	-.Ø62	28.813	34.59Ø	27.8Ø7	1452.3
233.Ø	236.25	-.Ø62	28.814	34.591	27.8Ø8	1452.3
234.Ø	237.3Ø	-.Ø61	28.816	34.592	27.8Ø8	1452.3
235.Ø	238.35	-.Ø6Ø	28.817	34.591	27.8Ø8	1452.4
236.Ø	239.25	-.Ø59	28.819	34.592	27.8Ø8	1452.4
237.Ø	24Ø.4Ø	-.Ø58	28.822	34.594	27.81Ø	1452.4
238.Ø	241.35	-.Ø57	28.824	34.594	27.81Ø	1452.4
239.Ø	242.3Ø	-.Ø56	28.825	34.595	27.811	1452.4
24Ø.Ø	243.4Ø	-.Ø56	28.826	34.596	27.812	1452.5
241.Ø	244.3Ø	-.Ø54	28.828	34.596	27.811	1452.5
242.Ø	245.4Ø	-.Ø54	28.83Ø	34.598	27.813	1452.5
243.Ø	246.35	-.Ø53	28.832	34.598	27.813	1452.5
244.Ø	247.4Ø	-.Ø53	28.833	34.599	27.814	1452.5
245.Ø	248.45	-.Ø52	28.834	34.599	27.814	1452.6
246.Ø	249.45	-.Ø52	28.837	34.6Ø1	27.816	1452.6
247.Ø	25Ø.5Ø	-.Ø51	28.838	34.6Ø2	27.816	1452.6
248.Ø	251.5Ø	-.Ø49	28.84Ø	34.6Ø1	27.815	1452.6
249.Ø	252.5Ø	-.Ø5Ø	28.841	34.6Ø3	27.817	1452.6
25Ø.Ø	253.5Ø	-.Ø49	28.842	34.6Ø3	27.817	1452.7
251.Ø	254.5Ø	-.Ø48	28.843	34.6Ø3	27.817	1452.7
252.Ø	255.5Ø	-.Ø48	28.845	34.6Ø4	27.818	1452.7
253.Ø	256.55	-.Ø47	28.846	34.6Ø5	27.818	1452.7
254.Ø	257.5Ø	-.Ø45	28.848	34.6Ø4	27.818	1452.8
255.Ø	258.55	-.Ø45	28.85Ø	34.6Ø6	27.819	1452.8
256.Ø	259.6Ø	-.Ø44	28.851	34.6Ø6	27.819	1452.8
257.Ø	26Ø.55	-.Ø44	28.852	34.6Ø7	27.82Ø	1452.8
258.Ø	261.65	-.Ø44	28.854	34.6Ø8	27.821	1452.8
259.Ø	262.55	-.Ø43	28.855	34.6Ø7	27.82Ø	1452.9
26Ø.Ø	263.65	-.Ø43	28.857	34.6Ø9	27.822	1452.9
261.Ø	264.7Ø	-.Ø42	28.857	34.6Ø8	27.821	1452.9
262.Ø	265.5Ø	-.Ø41	28.858	34.6Ø8	27.821	1452.9
263.Ø	266.55	-.Ø41	28.859	34.6Ø9	27.822	1452.9

EXPERIMENT 2311

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
264.Ø	267.5Ø	-.ØØØ	28.861	34.61Ø	27.822	1453.Ø
265.Ø	268.6Ø	-.Ø39	28.862	34.61Ø	27.822	1453.Ø
266.Ø	269.45	-.Ø39	28.864	34.612	27.824	1453.Ø
267.Ø	27Ø.6Ø	-.Ø38	28.865	34.611	27.823	1453.Ø
268.Ø	271.65	-.Ø37	28.867	34.611	27.823	1453.Ø
269.Ø	272.6Ø	-.Ø37	28.868	34.612	27.824	1453.1
27Ø.Ø	273.55	-.Ø36	28.869	34.612	27.824	1453.1
271.Ø	274.7Ø	-.Ø36	28.87Ø	34.613	27.824	1453.1
272.Ø	275.85	-.Ø35	28.872	34.613	27.824	1453.1
273.Ø	276.9Ø	-.Ø35	28.872	34.613	27.825	1453.1
274.Ø	277.9Ø	-.Ø34	28.873	34.613	27.824	1453.2
275.Ø	278.8Ø	-.Ø34	28.874	34.614	27.825	1453.2
276.Ø	279.95	-.Ø34	28.875	34.615	27.826	1453.2
277.Ø	28Ø.95	-.Ø33	28.877	34.615	27.826	1453.2
278.Ø	282.ØØ	-.Ø32	28.878	34.615	27.825	1453.2
279.Ø	283.ØØ	-.Ø32	28.879	34.615	27.826	1453.3
28Ø.Ø	284.Ø5	-.Ø32	28.88Ø	34.616	27.827	1453.3
281.Ø	285.ØØ	-.Ø31	28.881	34.616	27.826	1453.3
282.Ø	286.Ø5	-.Ø31	28.882	34.617	27.827	1453.3
283.Ø	287.ØØ	-.Ø3Ø	28.883	34.617	27.827	1453.3
284.Ø	287.95	-.Ø3Ø	28.885	34.618	27.828	1453.3
285.Ø	289.Ø5	-.Ø3Ø	28.886	34.619	27.829	1453.4
286.Ø	29Ø.1Ø	-.Ø3Ø	28.887	34.619	27.829	1453.4
287.Ø	291.15	-.Ø28	28.888	34.618	27.828	1453.4
288.Ø	292.2Ø	-.Ø27	28.89Ø	34.618	27.828	1453.4
289.Ø	293.15	-.Ø27	28.891	34.619	27.829	1453.4
29Ø.Ø	294.25	-.Ø26	28.891	34.619	27.828	1453.5
291.Ø	295.1Ø	-.Ø27	28.892	34.621	27.83Ø	1453.5
292.Ø	296.2Ø	-.Ø26	28.893	34.62Ø	27.83Ø	1453.5
293.Ø	297.15	-.Ø25	28.894	34.62Ø	27.829	1453.5
294.Ø	298.1Ø	-.Ø25	28.895	34.621	27.83Ø	1453.5
295.Ø	299.25	-.Ø24	28.896	34.62Ø	27.829	1453.6
296.Ø	3ØØ.15	-.Ø25	28.897	34.621	27.83Ø	1453.6
297.Ø	3Ø1.35	-.Ø24	28.898	34.621	27.83Ø	1453.6
298.Ø	3Ø2.35	-.Ø23	28.899	34.62Ø	27.83Ø	1453.6
299.Ø	3Ø3.4Ø	-.Ø22	28.9ØØ	34.62Ø	27.83Ø	1453.6
3ØØ.Ø	3Ø4.35	-.Ø22	28.9Ø2	34.623	27.831	1453.7
3Ø1.Ø	3Ø5.25	-.Ø21	28.9Ø3	34.622	27.831	1453.7
3Ø2.Ø	3Ø5.85	-.Ø21	28.9Ø3	34.622	27.831	1453.7
3Ø3.Ø	3Ø7.4Ø	-.Ø21	28.9Ø4	34.622	27.831	1453.7
3Ø4.Ø	3Ø8.3Ø	-.Ø21	28.9Ø5	34.622	27.831	1453.7
3Ø5.Ø	3Ø9.35	-.Ø21	28.9Ø6	34.623	27.832	1453.7
3Ø6.Ø	31Ø.35	-.Ø21	28.9Ø6	34.623	27.832	1453.8
3Ø7.Ø	311.15	-.Ø2Ø	28.9Ø7	34.623	27.831	1453.8
3Ø8.Ø	312.4Ø	-.Ø2Ø	28.9Ø9	34.625	27.833	1453.8
3Ø9.Ø	313.15	-.Ø19	28.91Ø	34.624	27.833	1453.8
31Ø.Ø	314.25	-.Ø18	28.911	34.624	27.832	1453.8
311.Ø	314.95	-.Ø17	28.911	34.623	27.831	1453.9
312.Ø	316.2Ø	-.Ø17	28.913	34.624	27.832	1453.9
313.Ø	317.3Ø	-.Ø18	28.913	34.625	27.833	1453.9
314.Ø	318.5Ø	-.Ø17	28.914	34.624	27.832	1453.9
315.Ø	319.3Ø	-.Ø17	28.915	34.625	27.833	1453.9
316.Ø	32Ø.7Ø	-.Ø17	28.916	34.626	27.834	1454.Ø
317.Ø	321.7Ø	-.Ø16	28.917	34.626	27.834	1454.Ø
318.Ø	322.6Ø	-.Ø16	28.918	34.626	27.834	1454.Ø
319.Ø	323.3Ø	-.Ø15	28.919	34.626	27.833	1454.Ø
32Ø.Ø	324.2Ø	-.Ø16	28.919	34.626	27.834	1454.Ø
321.Ø	325.35	-.Ø15	28.92Ø	34.626	27.833	1454.Ø
322.Ø	326.45	-.Ø15	28.921	34.626	27.834	1454.1
323.Ø	327.45	-.Ø15	28.921	34.625	27.834	1454.1
324.Ø	328.55	-.Ø15	28.922	34.627	27.835	1454.1
325.Ø	329.75	-.Ø14	28.923	34.626	27.834	1454.1
326.Ø	33Ø.75	-.Ø14	28.924	34.627	27.835	1454.1
327.Ø	331.9Ø	-.Ø14	28.925	34.627	27.835	1454.2
328.Ø	332.9Ø	-.Ø13	28.926	34.627	27.835	1454.2
329.Ø	333.95	-.Ø13	28.927	34.628	27.835	1454.2
33Ø.Ø	334.95	-.Ø12	28.928	34.627	27.834	1454.2

EXPERIMENT 2311

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
331.Ø	336.ØØ	-.Ø13	28.929	34.629	27.836	1454.2
332.Ø	337.ØØ	-.Ø11	28.929	34.627	27.835	1454.2
333.Ø	338.ØØ	-.Ø12	28.93Ø	34.628	27.836	1454.3
334.Ø	339.15	-.Ø11	28.931	34.628	27.835	1454.3
335.Ø	34Ø.Ø5	-.Ø11	28.932	34.629	27.836	1454.3
336.Ø	341.2Ø	-.Ø1Ø	28.933	34.628	27.835	1454.3
337.Ø	342.1Ø	-.Ø1Ø	28.933	34.628	27.835	1454.3
338.Ø	343.15	-.Ø1Ø	28.934	34.628	27.835	1454.4
339.Ø	344.25	-.Ø1Ø	28.934	34.628	27.835	1454.4
34Ø.Ø	345.2Ø	-.Ø11	28.934	34.629	27.836	1454.4
341.Ø	346.3Ø	-.Ø1Ø	28.935	34.628	27.836	1454.4
342.Ø	347.25	-.Ø11	28.936	34.63Ø	27.837	1454.4
343.Ø	348.35	-.Ø1Ø	28.937	34.629	27.836	1454.4
344.Ø	349.35	-.Ø1Ø	28.938	34.63Ø	27.837	1454.5
345.Ø	35Ø.35	-.Ø1Ø	28.939	34.631	27.837	1454.5
346.Ø	351.4Ø	-.ØØ9	28.939	34.63Ø	27.836	1454.5
347.Ø	352.35	-.ØØ9	28.94Ø	34.63Ø	27.837	1454.5
348.Ø	353.45	-.ØØ8	28.941	34.63Ø	27.837	1454.5
349.Ø	354.45	-.ØØ8	28.942	34.63Ø	27.837	1454.6
35Ø.Ø	355.45	-.ØØ9	28.942	34.631	27.838	1454.6
351.Ø	356.6Ø	-.ØØ8	28.943	34.63Ø	27.837	1454.6
352.Ø	357.55	-.ØØ8	28.944	34.631	27.837	1454.6
353.Ø	358.6Ø	-.ØØ7	28.945	34.631	27.837	1454.6
354.Ø	359.65	-.ØØ6	28.946	34.63Ø	27.837	1454.6
355.Ø	36Ø.6Ø	-.ØØ6	28.947	34.631	27.837	1454.7
356.Ø	361.7Ø	-.ØØ6	28.948	34.632	27.838	1454.7
357.Ø	362.7Ø	-.ØØ6	28.948	34.631	27.838	1454.7
358.Ø	363.7Ø	-.ØØ6	28.949	34.632	27.838	1454.7
359.Ø	364.75	-.ØØ6	28.949	34.632	27.838	1454.7
36Ø.Ø	365.7Ø	-.ØØ6	28.95Ø	34.632	27.838	1454.7
361.Ø	366.8Ø	-.ØØ6	28.951	34.633	27.839	1454.8
362.Ø	367.85	-.ØØ5	28.951	34.632	27.838	1454.8
363.Ø	368.8Ø	-.ØØ5	28.952	34.632	27.838	1454.8
364.Ø	369.85	-.ØØ6	28.952	34.633	27.839	1454.8
365.Ø	37Ø.85	-.ØØ5	28.953	34.632	27.838	1454.8
366.Ø	371.85	-.ØØ5	28.954	34.633	27.839	1454.9
367.Ø	372.9Ø	-.ØØ4	28.955	34.632	27.838	1454.9
368.Ø	373.85	-.ØØ5	28.955	34.633	27.839	1454.9
369.Ø	374.9Ø	-.ØØ4	28.956	34.632	27.838	1454.9
37Ø.Ø	375.95	-.ØØ5	28.957	34.634	27.84Ø	1454.9
371.Ø	376.9Ø	-.ØØ4	28.958	34.634	27.839	1454.9
372.Ø	378.ØØ	-.ØØ3	28.958	34.632	27.838	1455.Ø
373.Ø	379.Ø5	-.ØØ3	28.959	34.633	27.839	1455.Ø
374.Ø	38Ø.ØØ	-.ØØ2	28.96Ø	34.633	27.839	1455.Ø
375.Ø	381.Ø5	-.ØØ3	28.961	34.634	27.84Ø	1455.Ø
376.Ø	382.Ø5	-.ØØ2	28.961	34.632	27.838	1455.Ø
377.Ø	383.ØØ	-.ØØ2	28.962	34.634	27.839	1455.1
378.Ø	384.1Ø	-.ØØ1	28.963	34.633	27.838	1455.1
379.Ø	385.15	-.ØØ1	28.963	34.633	27.838	1455.1
38Ø.Ø	386.15	-.ØØ1	28.964	34.633	27.839	1455.1
381.Ø	387.2Ø	-.ØØ1	28.965	34.633	27.839	1455.1
382.Ø	388.25	-.ØØ1	28.965	34.633	27.839	1455.1
383.Ø	389.2Ø	-.ØØ1	28.966	34.633	27.839	1455.2
384.Ø	39Ø.25	-.ØØ1	28.967	34.634	27.84Ø	1455.2
385.Ø	391.3Ø	-.ØØ1	28.967	34.634	27.84Ø	1455.2
386.Ø	392.3Ø	.ØØØ	28.968	34.634	27.839	1455.2
387.Ø	393.3Ø	.ØØØ	28.969	34.634	27.84Ø	1455.2
388.Ø	394.4Ø	.ØØØ	28.969	34.634	27.839	1455.3
389.Ø	395.3Ø	.ØØØ	28.97Ø	34.635	27.84Ø	1455.3
39Ø.Ø	396.4Ø	.ØØ1	28.971	34.634	27.84Ø	1455.3
391.Ø	397.35	.ØØ1	28.971	34.634	27.84Ø	1455.3
392.Ø	398.5Ø	.ØØØ	28.972	34.635	27.841	1455.3
393.Ø	399.45	.ØØ1	28.972	34.634	27.839	1455.3
394.Ø	4ØØ.45	.ØØ1	28.973	34.634	27.84Ø	1455.4
395.Ø	4Ø1.5Ø	.ØØ1	28.974	34.635	27.84Ø	1455.4
396.Ø	4Ø2.5Ø	.ØØ1	28.974	34.635	27.84Ø	1455.4
397.Ø	4Ø3.55	.ØØ1	28.975	34.635	27.84Ø	1455.4

EXPERIMENT 2311

DEPTH (M)	PRESSURE (DBARS)	TEMP (DEG.C)	COND (MMHO)	SALINITY (Ø/ØØ)	SIGMAT	SOUND (M/SEC)
398.Ø	4Ø4.5Ø	.ØØ2	28.976	34.635	27.84Ø	1455.4
399.Ø	4Ø5.65	.ØØ3	28.977	34.634	27.84Ø	1455.5
4ØØ.Ø	4Ø6.55	.ØØ2	28.977	34.635	27.841	1455.5
4Ø1.Ø	4Ø7.65	.ØØ1	28.977	34.636	27.841	1455.5
4Ø2.Ø	4Ø8.6Ø	.ØØ2	28.977	34.634	27.84Ø	1455.5
4Ø3.Ø	4Ø9.65	.ØØ2	28.979	34.636	27.841	1455.5
4Ø4.Ø	41Ø.65	.ØØ4	28.98Ø	34.634	27.839	1455.5
4Ø5.Ø	411.65	.ØØ4	28.981	34.635	27.84Ø	1455.6
4Ø6.Ø	412.7Ø	.ØØ3	28.981	34.636	27.841	1455.6
4Ø7.Ø	413.65	.ØØ4	28.982	34.635	27.84Ø	1455.6
4Ø8.Ø	414.7Ø	.ØØ3	28.983	34.637	27.842	1455.6
4Ø9.Ø	415.7Ø	.ØØ4	28.983	34.636	27.841	1455.6
41Ø.Ø	416.8Ø	.ØØ5	28.984	34.635	27.84Ø	1455.6
411.Ø	417.75	.ØØ4	28.984	34.636	27.841	1455.7
412.Ø	418.75	.ØØ3	28.984	34.636	27.841	1455.7
413.Ø	419.85	.ØØ4	28.985	34.635	27.84Ø	1455.7
414.Ø	42Ø.8Ø	.ØØ4	28.986	34.636	27.841	1455.7
415.Ø	421.9Ø	.ØØ5	28.987	34.636	27.841	1455.7
416.Ø	422.8Ø	.ØØ5	28.987	34.636	27.841	1455.7
417.Ø	423.9Ø	.ØØ5	28.988	34.636	27.841	1455.8
418.Ø	424.9Ø	.ØØ6	28.989	34.635	27.84Ø	1455.8
419.Ø	425.9Ø	.ØØ5	28.99Ø	34.637	27.842	1455.8
42Ø.Ø	426.95	.ØØ6	28.99Ø	34.636	27.841	1455.8
421.Ø	427.95	.ØØ6	28.991	34.636	27.841	1455.8
422.Ø	429.ØØ	.ØØ6	28.991	34.636	27.841	1455.9
423.Ø	429.95	.ØØ6	28.992	34.637	27.841	1455.9
424.Ø	431.Ø5	.ØØ7	28.993	34.637	27.842	1455.9
425.Ø	432.ØØ	.ØØ7	28.993	34.636	27.841	1455.9
426.Ø	433.1Ø	.ØØ7	28.993	34.636	27.841	1455.9
427.Ø	434.Ø5	.ØØ7	28.994	34.637	27.841	1455.9
428.Ø	435.15	.ØØ8	28.996	34.637	27.841	1456.Ø
429.Ø	436.1Ø	.ØØ9	28.997	34.636	27.841	1456.Ø
43Ø.Ø	437.2Ø	.ØØ8	28.997	34.637	27.842	1456.Ø
431.Ø	438.15	.ØØ9	28.998	34.636	27.841	1456.Ø
432.Ø	439.25	.ØØ8	28.998	34.638	27.842	1456.Ø
433.Ø	44Ø.2Ø	.ØØ9	28.999	34.637	27.842	1456.1
434.Ø	441.3Ø	.Ø11	29.ØØ1	34.637	27.841	1456.1
435.Ø	442.25	.Ø11	29.ØØ2	34.637	27.841	1456.1
436.Ø	443.35	.Ø12	29.ØØ2	34.636	27.84Ø	1456.1
437.Ø	444.3Ø	.Ø11	29.ØØ3	34.637	27.841	1456.1
438.Ø	445.4Ø	.Ø12	29.ØØ4	34.637	27.841	1456.1
439.Ø	446.3Ø	.Ø11	29.ØØ4	34.638	27.842	1456.2
44Ø.Ø	447.4Ø	.Ø12	29.ØØ4	34.636	27.841	1456.2
441.Ø	448.35	.Ø12	29.ØØ5	34.637	27.841	1456.2
442.Ø	449.45	.Ø11	29.ØØ6	34.638	27.842	1456.2
443.Ø	45Ø.35	.Ø11	29.ØØ6	34.638	27.842	1456.2
444.Ø	451.5Ø	.Ø14	29.ØØ8	34.636	27.84Ø	1456.3
445.Ø	452.4Ø	.Ø14	29.ØØ9	34.637	27.842	1456.3
446.Ø	453.45	.Ø15	29.Ø1Ø	34.637	27.841	1456.3
447.Ø	454.45	.Ø15	29.Ø11	34.637	27.841	1456.3
448.Ø	455.45	.Ø16	29.Ø12	34.637	27.841	1456.3
449.Ø	456.45	.Ø16	29.Ø13	34.637	27.841	1456.3
45Ø.Ø	457.35	.Ø17	29.Ø14	34.638	27.842	1456.4

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OCEANOGRAPHIC OBSERVATIONS AT OCEAN STATION P (50°N, 145°W)

VOLUME 83

17 June - 3 August 1977

Seakem Oceanography Ltd.

UBRARY
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Pacific Marine Science Report 77-24

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December 1977

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in accordance with accepted bibliographic custom.

ABSTRACT

Physical, chemical and biological oceanographic observations are made from the weathership at Ocean Weather Station Papa, and between Esquimalt and Station Papa, on a routine continuing basis. Physical oceanography data only are shown, including surface observations and profiles obtained with bottle casts and conductivity-temperature-pressure instruments.

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INTRODUCTION

Canadian operation of Ocean Weather Station P (Latitude 50°00'N, Longitude 145°00'W) was inaugurated in December, 1950. The station is occupied primarily to make meteorological observations of the surface and upper air and to provide an air-sea rescue service. The station is manned by two vessels operated by the Marine Services Branch of the Ministry of Transport. They are the CCGS Vancouver and the CCGS Quadra. Each ship remains on station for a period of six weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch.

Bathythermograph observations have been made at Station P since July 1952. A program of more extensive oceanographic observations commenced in August 1956. This was extended in April 1959, by the addition of a series of oceanographic stations along the route to and from station P and Swiftsure Bank. These stations are known as Line P stations. The number of stations on Line P has been increased twice and now consists of twelve stations (Fig. 1). Bathythermograph observations and surface salinity sample collections, in addition to being made on Line P oceanographic stations, are also made at odd meridians at 40', i.e. 139°40'W, 141°40'W, etc. These stations are known as Line P BT stations. Data observed prior to 1968 have been indexed by Collins et al (1969).

The present record includes hydrographic, continuously sampled STP and surface salinity and temperature data collected from the CCGS Vancouver during the period 17 June to 3 August 1977.

All physical oceanographic data have been stored by the Canadian Oceanographic Data Centre (CODC), 615 Booth Street, Ottawa, Ontario, Canada. Requests for these data should be directed to CODC.

Biological and productivity data are published in the Manuscript Report series of the Fisheries Research Board of Canada (FRB), Pacific Biological Station, Nanaimo, British Columbia, Canada. Requests for these data should be directed to FRB.

Marine geochemical data are for the Ocean Chemistry Group, Ocean and Aquatic Sciences, Environment Canada, Institute of Ocean Sciences, P.O. Box 6000, Sidney, British Columbia, Canada, V8L 4B2.

PROGRAM OF OBSERVATION FROM CCGS VANCOUVER, 17 JUNE - 3 AUGUST 1977 (P-77-5)
(CODC Ref. No. 15-77-005)

Oceanographic observations were made by Mr. B. Canning and Ms. T. Mullin of Seakem Oceanography Ltd., Victoria, B.C.

En Route to Station P

Line P Stations 1 to 12 were occupied and an STP profile made to near bottom or 1500 metres. Two hydrocasts were made at Stations 6 and 10 to 1500 metres.

Samples for nitrate, nutrient, alkalinity and total CO_2 were taken from the seawater loop at all whole stations, with salinity taken at whole and half stations. Surface bucket salinities were taken at whole stations 1 and 2. Surface bucket temperatures were taken at all whole and half stations.

Surface tarball tows were made at Stations 1, 3, 5, 7, 9 and 11.

The thermosalinograph, surface temperature recorder and PCO_2 system were run continuously.

Mechanical BT's or XBT's were taken at all whole and half stations.

On Station P

The oceanographic program was carried out as follows:

Physical Oceanography:

1) Profiles of salinity, temperature and oxygen were obtained from 6 hydrographic casts to near bottom (4200 metres).

2) 37 STP profiles to 1500 metres (or near bottom) were obtained.

3) BT's or XBT's were taken every three hours to coincide with meteorological observations, encoded and transmitted according to the IGOSS format.

4) Salinity samples were collected daily at 0000 hrs GMT from the seawater loop (or from a bucket when the loop was not operational).

Marine Geochemistry:

1) Nutrient and salinity samples were collected daily at 0000 hrs GMT from the seawater loop or bucket. Extra nutrient samples were taken every second day. One profile for nutrients to 500 m and one profile for tritium to 500 m were taken. One bucket sample and 7 rainwater samples (total of 39 litres) were also collected for tritium. A 24 hour nutrient series was also completed, with a sample taken every hour.

2) Alkalinity and total CO_2 samples were taken about every 3 days from the seawater loop or bucket, and in addition, 1 profile each to 500 m was taken.

3) Air CO_2 samples were taken in quadruplicate at weekly intervals on Sundays, with extra samples taken on Thursdays.

4) 4 surface tarball tows were completed.

5) 1 seawater C-14 sample was extracted from 45 gallons of seawater taken from the seawater loop along with 1 seawater C-13 and 1 air C-13 sample.

6) PCO_2 carboys were filled every 3 days when the loop system was operational.

Biological Oceanography:

Samples were obtained as follows:

1) 35 - 150 metre vertical plankton hauls
2 - 1200 metre vertical plankton hauls
5 Secchi disc readings were taken at local noon.
3 groups of subsurface plankton hauls were taken on 3 consecutive nights at sunset.

2) 1 profile to 200 metres for each of plant pigment, nitrate and C_{14} productivity were obtained, as well as 4 surface samples each for pigments, nitrates and chlorophyll a.

On July 2, 1977, an emergency run was made into Quatsino Sound. Salinity samples were taken every three hours. The PCO_2 system, thermosalinograph and surface temperature recorder were run continuously. Surface salinity samples were taken every 3 hours. The ship returned to Station P on July 5, 1977.

En Route from Station P

STD profiles were made at Stations 12 to 1. Nutrient, nitrate, alkalinity and total CO_2 samples were taken from the seawater loop at all whole stations. Salinity samples were taken at all whole and half stations. Bucket salinity samples were taken at Stations 5 to 1. No surface bucket temperatures were taken. Tarball tows were taken at Stations 12, 10, 8, 6, and 4. Mechanical BT's or XBT's were taken at all whole and half stations. The PCO_2 system, thermosalinograph, and surface temprature recorder were run continuously. Two hydrocasts were made at Stations 10 and 6 to 1500 m.

Observations for Other Agencies

1) Marine mammal observations were made by the ship's officers for Mr. I. McAskie, Fisheries Research Board of Canada, Pacific Biological Station, Nanaimo, British Columbia, Canada.

2) Bird observations were made by the ship's officers for Dr. M. Myres, University of Alberta, Calgary, Alberta, Canada and Mr. J. Guiguet, Curator of Birds and Mammals, Provincial Museum, Department of Provincial Secretary and Travel Industry, Victoria, British Columbia, Canada.

3) Air CO_2 samples were taken weekly in duplicate for Scripps Institution of Oceanography, La Jolla, California, U.S.A.

Data were processed for publication by Ms. M. Sainsbury of Seakem Oceanography Ltd., Victoria, B.C.

OBSERVATIONAL PROCEDURES

Observations for salinity, oxygen and temperature from all hydrographic casts, including the surface, were obtained with Niskin water sample bottles equipped with either Richter and Wiese and/or Yoshino Keiki Co. reversing thermometers. Two protected thermometers were used on all bottles and one unprotected thermometer was used on each bottle at depths of 300 m or greater. The accuracy of protected reversing thermometers is believed to be $\pm$ 0.02°C.

The daily surface water temperatures were measured from a bucket sample using a deck thermometer of $\pm$ 0.1°C accuracy. The daily surface salinity samples were obtained from the seawater loop. When the seawater loop was not operational these samples were obtained with a bucket, and are indicated with a 'b' in this data record.

Salinity determinations were made aboard ship with either an Autolab Model 601 Mark III inductive salinometer or a Hytech Model 6220 lab salinometer. Accuracy using duplicate determinations is estimated to be $\pm$ 0.003°/oo.

Depth determinations were made using the "depth difference" method described in the U.S.N. Hydrographic Office Publication No. 607 (1955). Depth estimates have an approximate accuracy of $\pm$ 5 m for depths less than 1000 m, and $\pm$ 0.5% of depth for depths greater than 1000 m.

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Carpenter, 1955).

Line P engine intake continuous temperature on both ships were recorded by a Honeywell Electronik 15 Recorder. The temperature probe is at a depth of approximately 3 meters below the sea surface and the instrument accuracy is believed to be $\pm$ 0.1°C.

Each ship is equipped with a Plessey Model 6600-T thermosalinograph which is used, on Line P, for continuous recording of surface temperatures and salinities from the ship's seawater loop. The temperature probe is mounted at the seawater loop intake (approximately 3 meters below the surface) and the salinity probe and recorder are situated in the dry lab. The accuracy of this instrument is believed to be $\pm$ 0.1°C for temperature and $\pm$ 0.1°/oo for salinity.

STP profiles were taken with a Guildline Model 8700 STP system.

COMPUTATIONS

All hydrographic data were processed with the aid of an IBM 370 computer and a UNIVAC 1100 computer. Reversing thermometer temperature corrections, thermometric depth calculations and accepted depth from the "depth difference" method were computed. Extraneous thermometric depths caused by thermometer malfunctions were automatically edited and replaced. A Calcomp 565 Offline

Plotter was used to plot temperature-salinity and temperature-oxygen diagrams, as well as plots of temperature, salinity and dissolved oxygen vs $\log_{10}$ depth. These plots were used to check the data for errors.

Missing hydrographic data were obtained using a weighted parabolas interpolation method (Reiniger and Ross, 1968). These data are indicated with an asterisk in this data record.

Data values which we suspect but which we have included in this data record are indicated with a plus. These data have been removed from punch card and magnetic tape records.

Analog records from the salinity-temperature-pressure instrument have been machine digitized, then replotted using the Calcomp plotter.

Digitization was continued until original and computer plotted traces were coincident. Temperature and salinity values were listed at standard pressure; integrals (depths, geopotential anomaly, and potential energy anomaly) were computed from the entire array of digitized data.

The headings for the data listings are explained as follows:

PRESS	is pressure (decibars)
TEMP	is temperature (degrees Celsius)
SAL	is salinity (parts per thousand)
DEPTH	is reported in metres
SIGMA-T	is specific gravity anomaly
SVA	is specific volume anomaly
THETA	is potential temperature (degrees Celsius)
SVA (THETA)	is potential specific volume anomaly
DELTA D	is geopotential anomaly (J/kg)
POT EN	is potential energy in units of 10^8 ergs/cm^2
OXY	is the concentration of dissolved oxygen expressed in millilitres per litre
SOUND	is the velocity of sound in m/sec

REFERENCES

Carpenter, J.H., 1965. The Chesapeake Bay Institute technique for the Winkler dissolved oxygen method. Limnol. and Oceanogr. 10: 141-143.

Collins, C.A., R.L. Tripe, D.A. Healey and J. Joergensen, 1969. The time distribution of serial oceanographic data from the Ocean Station P programme. Fish. Res. Bd. Can. Tech. Rept. No. 106.

MacNeill, M., 1977. A study of anomalous salinity and oxygen values in the deep water at Ocean Station P from 1960-1976 (unpublished manuscript). Pacific Marine Science Report 77-9.

Reiniger, R.F. and C.K. Ross, 1968. A method of interpolation with application to oceanographic data. Deep Sea Res. 15: 185-193.

U. S. N. Hydrographic Office, 1955. Instruction Manual for oceanographic observations, Publ. No. 607.

LOG OF HYDROGRAPHIC AND STD OBSERVATIONS

CONSEC. #	STATION	DATE (GMT)	TIME (GMT)	STD (m)	HYDROCAST (m)	COMMENTS
001	125-33°W	17/06/77	2315	90		
002	126-00°W	18/06/77	0120	90		
003	126-40°W	18/06/77	0350	1,200		
004	127-40°W	18/06/77	0730	1,390		
005	128-40°W	18/06/77	1115	1,500		
006	130-40°W	18/06/77	1750	1,500		
007	130-40°W	18/06/77	1915		1,500	T, S
008	132-40°W	19/06/77	0210	1,450		
009	134-40°W	19/06/77	0823	1,470		
010	136-40°W	19/06/77	1450	1,470		
011	138-40°W	19/06/77	2130	1,475		
012	138-40°W	19/06/77	2235		1,500	T, S
013	140-40°W	20/06/77	0515	1,375		
014	142-40°W	20/06/77	1210	1,320		
015	P	21/06/77	0010	1,320		
016	P	21/06/77	1715	1,415		
017	P	22/06/77	1740		4,200	T,S,O,Alk.
018	P	22/06/77	2045	1,445		
019	P	23/06/77	1725	1,525		
020	P	24/06/77	1720	1,425		
021	P	25/06/77	1725	1,250		
022	P	26/06/77	1830	1,385		
023	P	28/06/77	1805		4,200	T,S,O,Alk.
024	P	28/06/77	2320	1,500		
025	P	29/06/77	1730	1,450		
026	P	30/06/77	1725	1,440		
027	P	1/07/77	1720	1,420		
028	P	6/07/77	1735		4,200	T,S,O,Alk.
029	P	6/07/77	2030	1,450		
030	P	7/07/77	1735	1,500		
031	P	8/07/77	1735	1,500		
032	P	9/07/77	1750	1,200		
033	P	10/07/77	1820	1,360		
034	P	11/07/77	1755	1,460		
035	P	12/07/77	1735		4,200	T,S,O,Alk.
036	P	12/07/77	2020	1,500		
037	P	13/07/77	1735	1,350		
038	P	14/07/77	1730	1,500		
039	P	15/07/77	1738	1,475		
040	P	16/07/77	1730	1,475		
041	P	17/07/77	1825	1,500		
042	P	18/07/77	1742		4,200	T,S,O,Alk.
043	P	18/07/77	2035	1,500		
044	P	19/07/77	1740	1,500		
045	P	20/07/77	1920	1,500		
046	P	21/07/77	1730	1,500		
047	P	22/07/77	1730	1,425		
048	P	23/07/77	1735	1,500		

LOG OF HYDROGRAPHIC AND STD OBSERVATIONS (Continued)

CONSEC. #	STATION	DATE (GMT)	TIME (GMT)	STD (m)	HYDROCAST (m)	COMMENTS
049	P	24/07/77	1745	1,425		
050	P	25/07/77	1815		4,200	T,S,O,Alk.
051	P	25/07/77	2115	1,500		
052	P	26/07/77	1730	1,475		
053	P	27/07/77	1730	1,500		
054	P	28/07/77	1730	1,475		
055	P	29/07/77	1725	1,500		
056	P	30/07/77	1730	1,475		
057	P	31/07/77	1740	1,500		
058	142-40°W	1/08/77	0500	1,520		
059	140-40°W	1/08/77	1235	1,440		
060	138-40°W	1/08/77	1925		1,500	T, S
061	138-40°W	1/08/77	2050	1,510		
062	136-40°W	2/08/77	0250	1,485		
063	134-40°W	2/08/77	0915	1,505		
064	132-40°W	2/08/77	1517	1,480		
065	130-40°W	2/08/77	2135	1,480		
066	130-40°W	2/08/77	2215		1,500	T, S
067	128-40°W	3/08/77	0530	1,250		
068	127-40°W	3/08/77	0915	1,300		
069	126-40°W	3/08/77	1240	1,180		
070	126-00°W	3/08/77	1570	87		
071	125-33°W	3/08/77	1715	87		

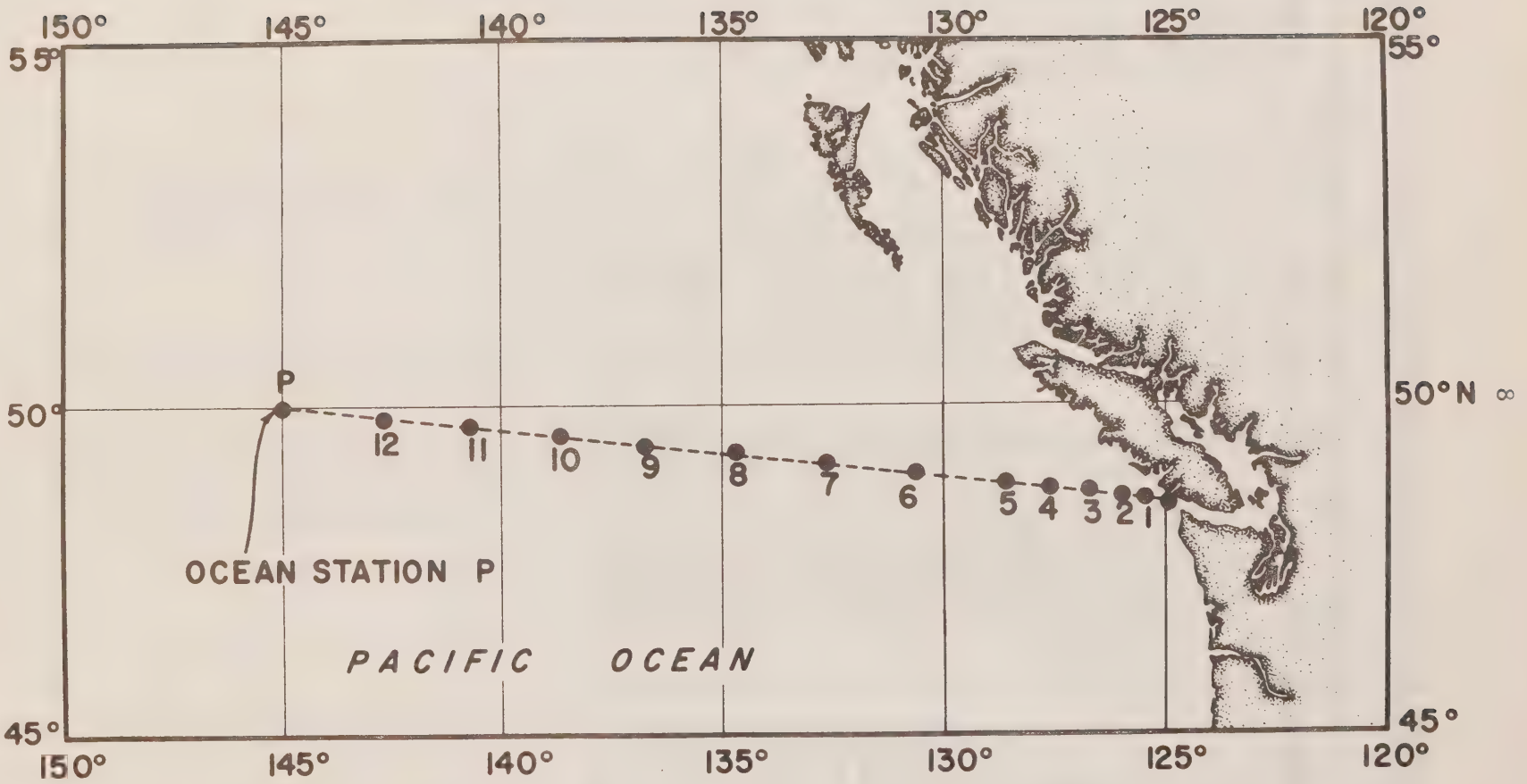


Fig. 1 Chart showing Line P station positions.

Oceanographic Data Obtained on Cruise P-77-5

(CODC Reference No. 15-77-005)

Results of Hydrographic Observations

(P-77-5)

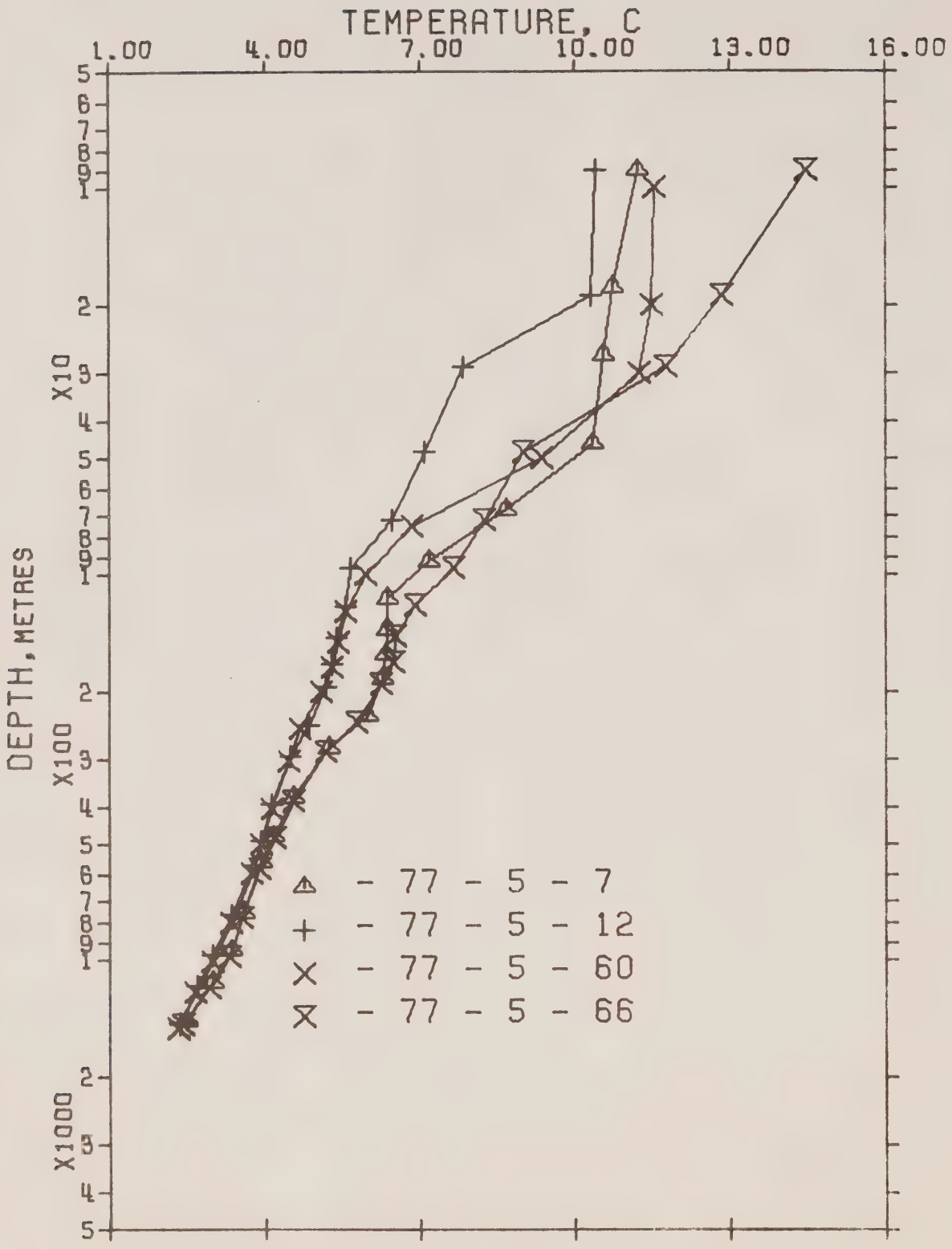


Figure 2. Composite plot of temperature vs $\log_{10}$ depth for Line P stations. P-77-5.

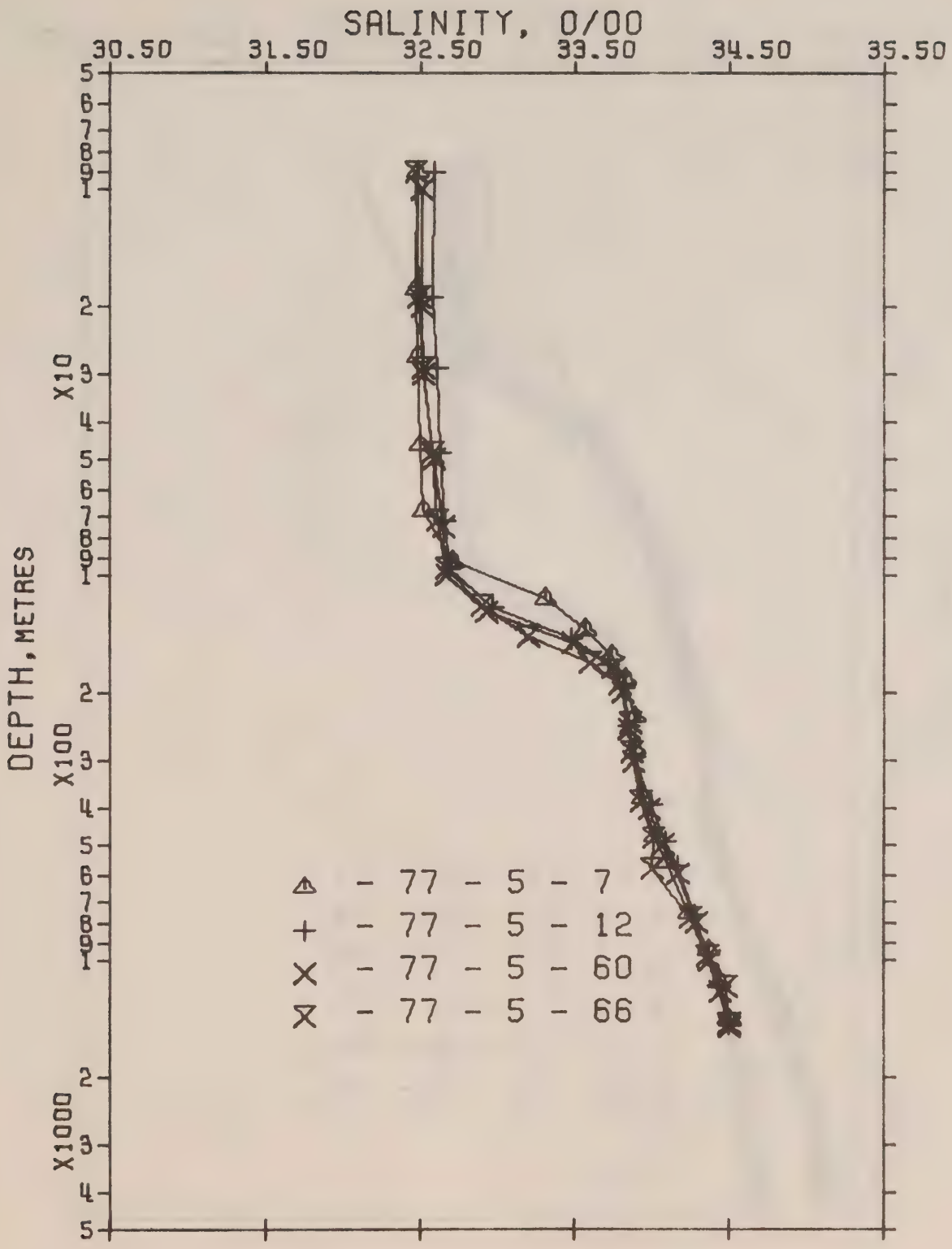


Figure 3. Composite plot of salinity vs $\log_{10}$ depth for Line P stations. P-77-5.

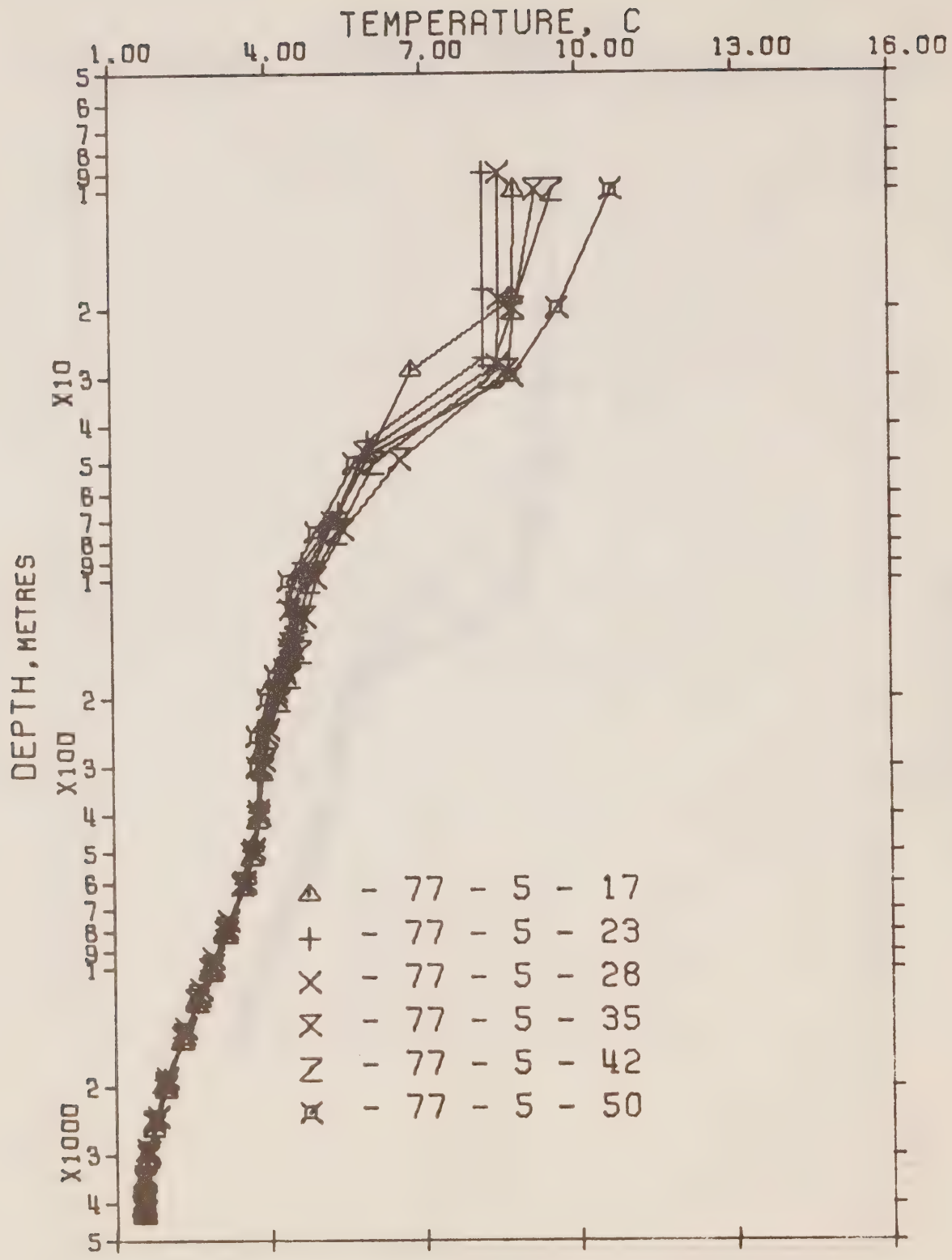


Figure 4. Composite plot of temperature vs $\log_{10}$ depth for Station P. P-77-5.

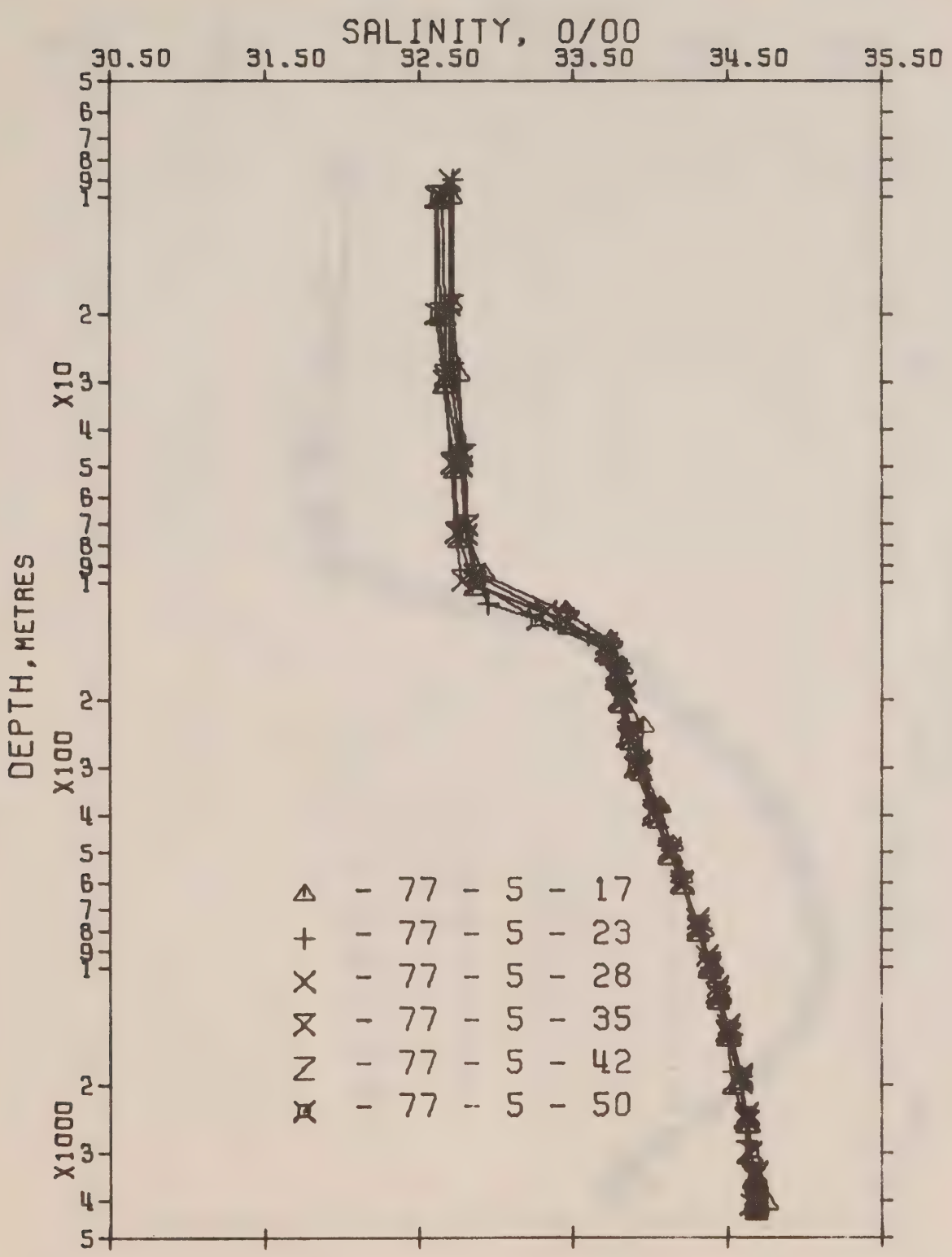


Figure 5. Composite plot of salinity vs $\log_{10}$ depth for Station P. P-77-5.

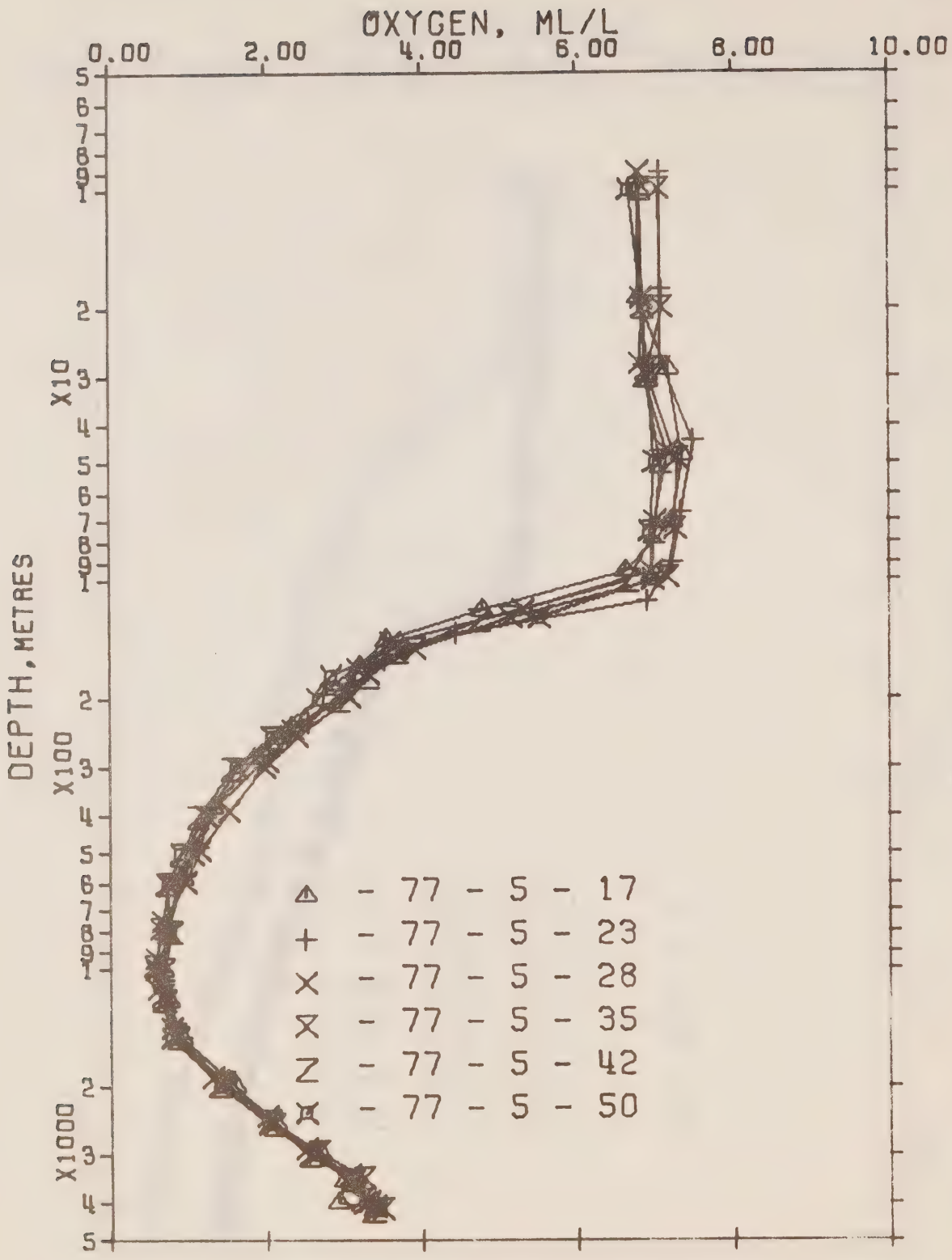
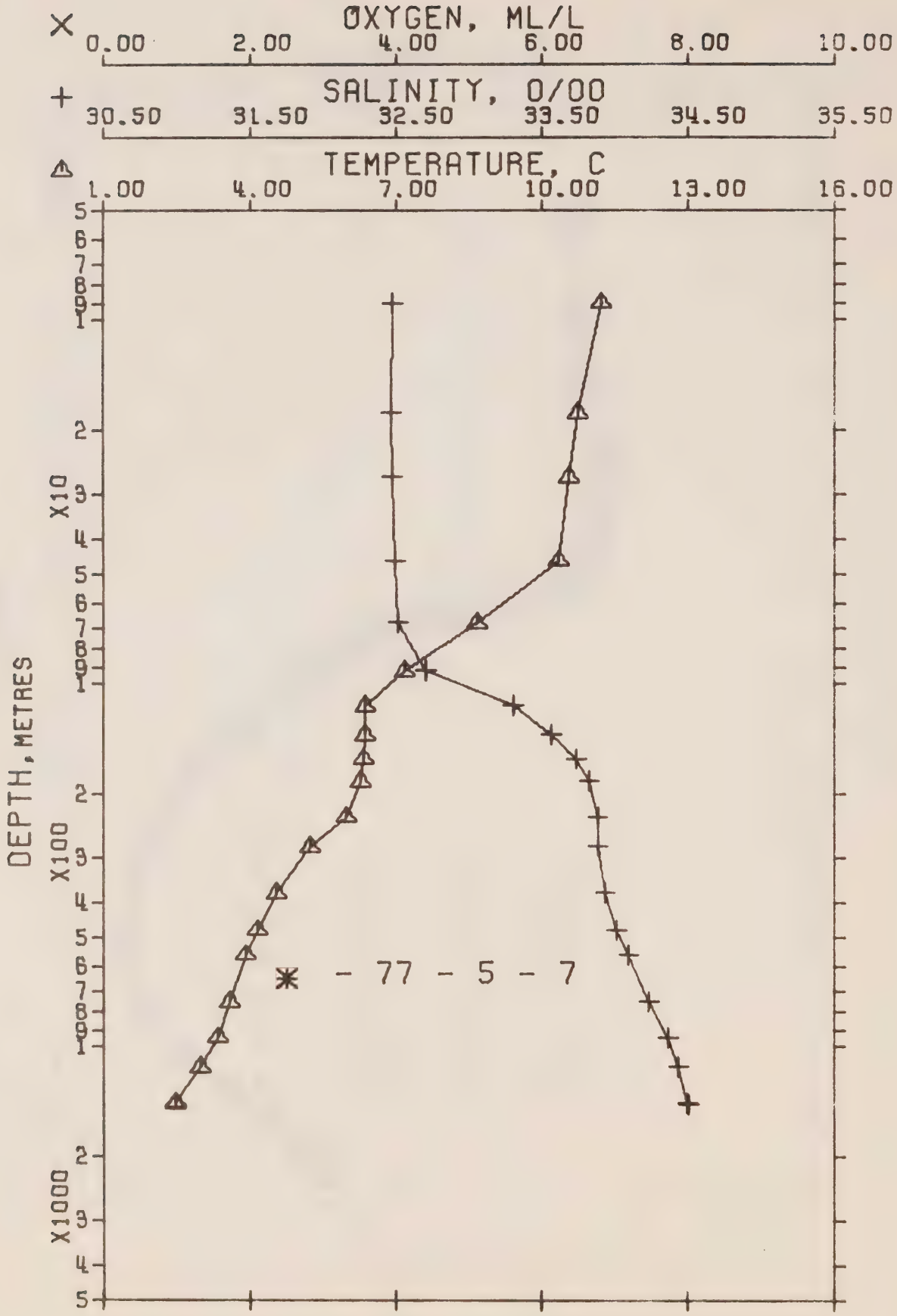


Figure 6. Composite plot of oxygen vs $\log_{10}$ depth for Station P. P-77-5.


X
OXYGEN, ML/L
0.00
2.00
4.00
6.00
8.00
10.00
+
SALINITY, O/OO
30.50
31.50
32.50
33.50
34.50
35.50
TEMPERATURE, C
1.00
4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
X10
X100
X1000
* - 77 - 5 - 7

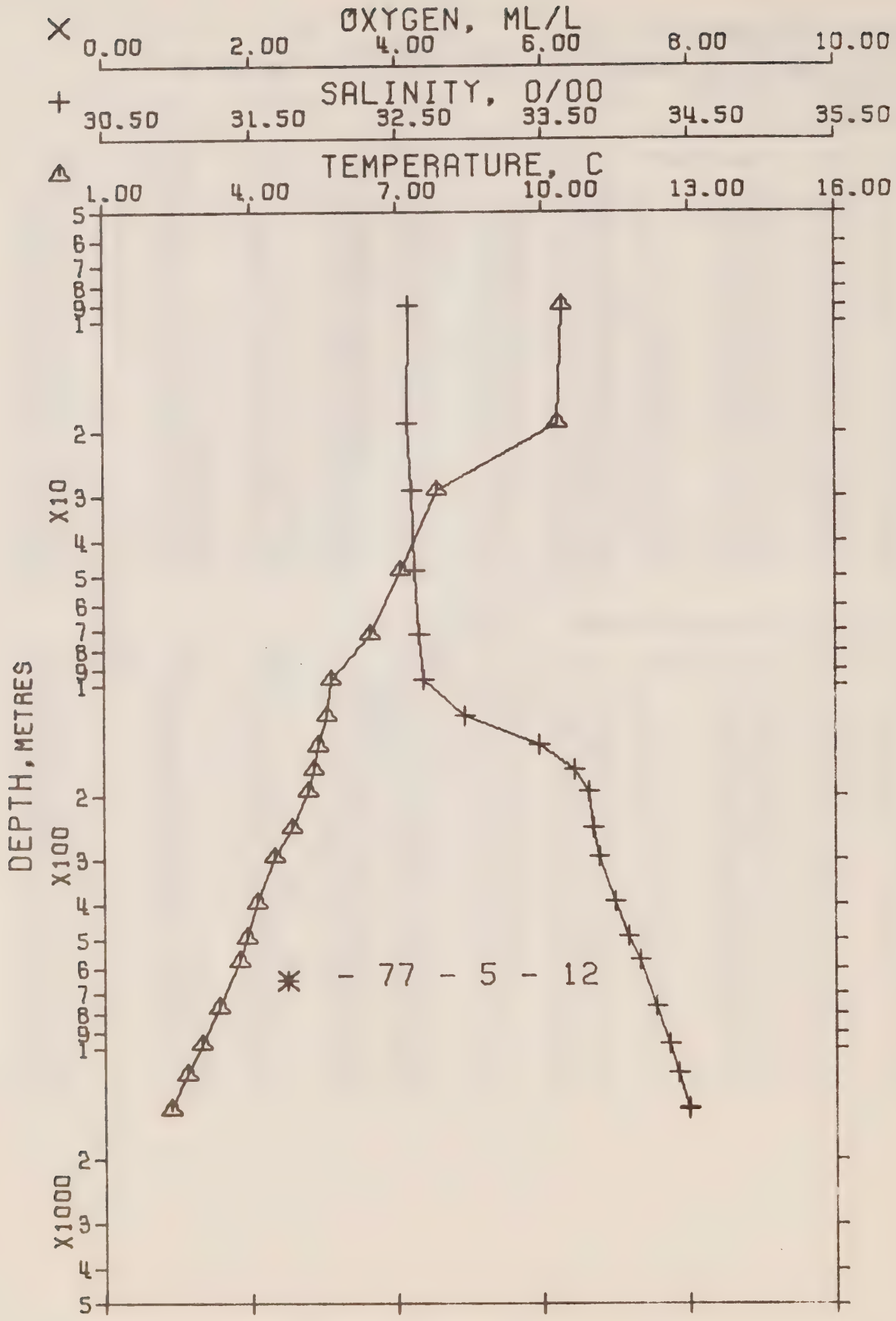
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- [illegible] 7 DATE 18/ 6/77 GMT 19.3
POSITION 49- 2.0 N, 130-40.0 W STATION 6
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.27	32.488	0	24.797	316.0	11.27	316.0	.00	.00		1492.
9	11.22	32.484	9	24.803	315.6	11.22	315.4	.29	.01		1492.
18	10.74	32.474	18	24.880	308.5	10.74	308.1	.57	.05		1490.
27	10.58	32.483	27	24.914	305.4	10.58	304.8	.85	.12		1490.
46	10.35	32.504	46	24.970	300.4	10.34	299.5	1.43	.33		1489.
68	8.67	32.525	68	25.257	273.4	8.66	272.1	2.06	.70		1483.
93	7.18	32.715	92	25.620	238.9	7.17	237.6	2.68	1.21		1478.
116	6.37	33.306	115	26.192	184.8	6.36	183.2	3.17	1.72		1476.
139	6.38	33.569	138	26.397	165.7	6.37	163.7	3.57	2.25		1477.
162	6.34	33.744	161	26.540	152.4	6.33	150.1	3.94	2.81		1477.
186	6.27	33.826	185	26.614	145.8	6.25	143.1	4.30	3.45		1478.
234	5.98	33.888	232	26.700	138.1	5.96	134.9	4.97	4.89		1477.
282	5.24	33.888	280	26.789	129.8	5.22	126.4	5.62	6.59		1475.
380	4.53	33.937	377	26.908	119.0	4.50	115.1	6.83	10.68		1474.
480	4.14	34.022	476	27.017	109.3	4.10	104.7	7.97	15.67		1474.
563	3.90	34.101	558	27.104	101.5	3.86	96.4	8.84	20.29		1474.
757	3.57	34.245	750	27.252	88.7	3.52	82.3	10.68	32.62		1476.
952	3.33	34.372	943	27.376	78.0	3.26	70.4	12.30	46.72		1479.
1149	2.97	34.442	1138	27.465	70.1	2.89	61.9	13.76	62.33		1481.
1442	2.47	34.500	1427	27.555	61.8	2.37	53.3	15.71	88.08		1483.
1453	2.46	34.507	1437	27.562	61.2	2.36	52.7	15.77	89.00		1484.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.27	32.488	0	24.797	316.0	11.27	316.0	.00	.00		1492.
10	11.15	32.483	10	24.814	314.6	11.15	314.4	.32	.02		1491.
20	10.70	32.476	20	24.888	307.7	10.70	307.3	.63	.06		1490.
30	10.54	32.487	30	24.925	304.4	10.53	303.8	.93	.14		1490.
50	10.02	32.508	50	25.029	294.8	10.01	293.8	1.54	.39		1488.
75	8.22	32.583	75	25.370	262.6	8.21	261.4	2.24	.83		1482.
100	6.90	32.920	99	25.819	220.1	6.89	218.6	2.85	1.38		1478.
125	6.37	33.417	124	26.279	176.7	6.36	175.0	3.33	1.93		1477.
150	6.36	33.656	149	26.469	159.0	6.35	156.9	3.75	2.52		1477.
175	6.30	33.789	174	26.581	148.7	6.29	146.2	4.13	3.15		1478.
200	6.18	33.846	199	26.641	143.4	6.16	140.5	4.50	3.84		1478.
225	6.03	33.878	224	26.685	139.4	6.01	136.3	4.85	4.61		1477.
250	5.71	33.888	249	26.733	135.1	5.69	131.8	5.19	5.44		1477.
300	5.09	33.898	298	26.815	127.5	5.07	124.0	5.85	7.27		1475.
400	4.44	33.956	397	26.932	116.8	4.41	112.8	7.07	11.63		1474.
500	4.08	34.042	497	27.040	107.2	4.04	102.5	8.19	16.76		1474.
600	3.83	34.132	595	27.137	98.7	3.78	93.3	9.22	22.51		1475.
700	3.66	34.207	694	27.213	92.0	3.61	86.0	10.17	28.82		1476.
800	3.51	34.276	793	27.282	86.1	3.45	79.4	11.06	35.62		1477.
900	3.39	34.341	892	27.346	80.6	3.32	73.3	11.89	42.84		1478.
1000	3.24	34.390	990	27.399	75.9	3.16	68.2	12.67	50.40		1479.
1200	2.88	34.453	1188	27.482	68.5	2.79	60.3	14.11	66.53		1481.


OXYGEN, ML/L
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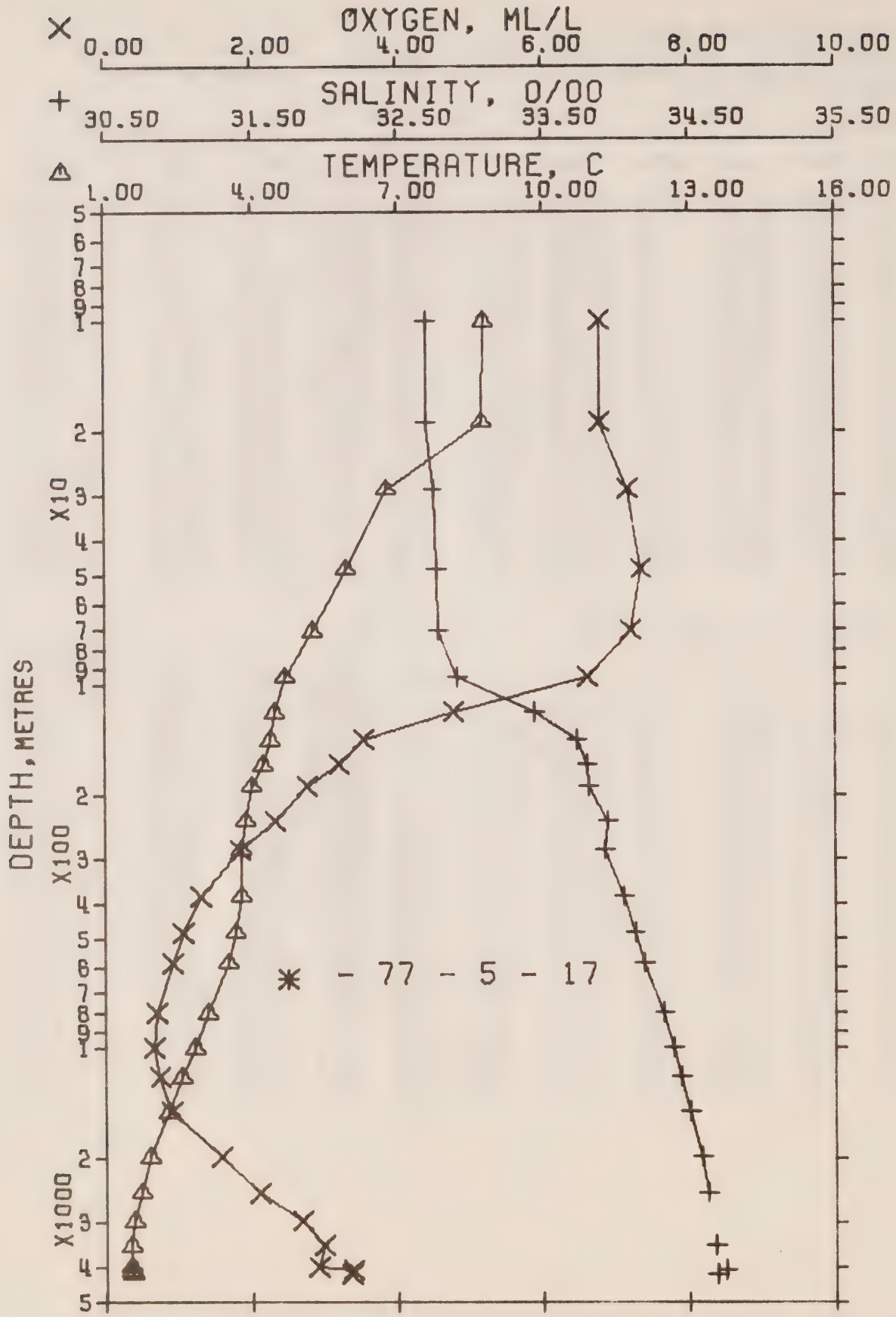
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 12 DATE 19/ 6/77 GMT 22.5
POSITION 49-34.0 N, 138-40.0 W STATION 10
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	10.47	32.588	0	25.015	295.3	10.47	295.3	.00	.00		1489.
9	10.42	32.587	9	25.022	294.7	10.42	294.5	.27	.01		1489.
19	10.33	32.585	19	25.036	293.6	10.33	293.2	.57	.06		1489.
29	7.84	32.614	29	25.449	254.4	7.84	253.9	.84	.12		1480.
48	7.09	32.629	48	25.565	243.6	7.09	242.9	1.32	.31		1477.
72	6.47	32.659	72	25.670	233.8	6.46	232.8	1.89	.67		1475.
97	5.66	32.687	96	25.792	222.3	5.65	221.2	2.45	1.14		1472.
122	5.55	32.971	121	26.029	200.1	5.54	198.7	2.98	1.73		1473.
147	5.39	33.485	146	26.454	160.1	5.38	158.4	3.43	2.35		1473.
171	5.28	33.721	170	26.653	141.5	5.27	139.5	3.80	2.94		1473.
196	5.16	33.816	195	26.742	133.3	5.14	131.0	4.14	3.59		1473.
247	4.84	33.847	245	26.803	127.9	4.82	125.2	4.80	5.07		1473.
297	4.49	33.886	295	26.872	121.6	4.47	118.6	5.43	6.81		1472.
398	4.12	33.998	395	27.000	110.1	4.09	106.4	6.60	10.96		1473.
497	3.91	34.094	493	27.098	101.6	3.87	97.1	7.64	15.73		1473.
574	3.77	34.168	569	27.171	95.2	3.73	90.1	8.40	19.84		1474.
773	3.34	34.283	766	27.304	83.5	3.29	77.4	10.17	31.98		1476.
975	2.98	34.373	966	27.409	74.2	2.91	67.3	11.76	46.13		1478.
1179	2.69	34.429	1167	27.480	68.1	2.61	60.6	13.21	62.00		1480.
1472	2.36	34.498	1456	27.563	60.8	2.26	52.6	15.09	87.43		1483.
1482	2.35	34.500	1466	27.565	60.6	2.25	52.3	15.15	88.36		1484.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	10.47	32.588	0	25.015	295.3	10.47	295.3	.00	.00		1489.
10	10.41	32.587	10	25.024	294.6	10.41	294.4	.30	.02		1489.
20	10.06	32.588	20	25.083	289.1	10.06	288.7	.59	.06		1488.
30	7.80	32.615	30	25.455	253.8	7.80	253.3	.86	.13		1480.
50	7.04	32.632	50	25.574	242.7	7.03	242.0	1.36	.33		1477.
75	6.37	32.662	75	25.685	232.4	6.37	231.4	1.95	.71		1475.
100	5.64	32.729	99	25.828	219.0	5.64	217.9	2.52	1.22		1472.
125	5.53	33.043	124	26.088	194.5	5.52	193.1	3.04	1.81		1473.
150	5.38	33.517	149	26.480	157.6	5.36	155.8	3.48	2.42		1473.
175	5.26	33.736	174	26.667	140.2	5.25	138.1	3.85	3.04		1473.
200	5.13	33.819	199	26.747	132.9	5.12	130.5	4.19	3.68		1473.
225	4.97	33.834	224	26.778	130.1	4.95	127.5	4.52	4.40		1473.
250	4.82	33.850	249	26.808	127.5	4.80	124.7	4.84	5.18		1473.
300	4.48	33.890	298	26.876	121.2	4.46	118.2	5.46	6.92		1472.
400	4.12	34.000	397	27.002	110.0	4.09	106.2	6.62	11.04		1473.
500	3.90	34.097	496	27.101	101.3	3.87	96.8	7.67	15.88		1473.
600	3.71	34.185	595	27.191	93.4	3.66	88.2	8.64	21.32		1474.
700	3.48	34.245	694	27.260	87.3	3.43	81.6	9.55	27.30		1475.
800	3.29	34.296	793	27.320	82.1	3.23	75.9	10.39	33.77		1476.
900	3.10	34.342	892	27.373	77.4	3.04	70.8	11.19	40.67		1477.
1000	2.94	34.380	991	27.418	73.4	2.87	66.4	11.94	47.96		1478.
1200	2.66	34.435	1188	27.486	67.5	2.58	59.9	13.35	63.74		1480.


OXYGEN, ML/L
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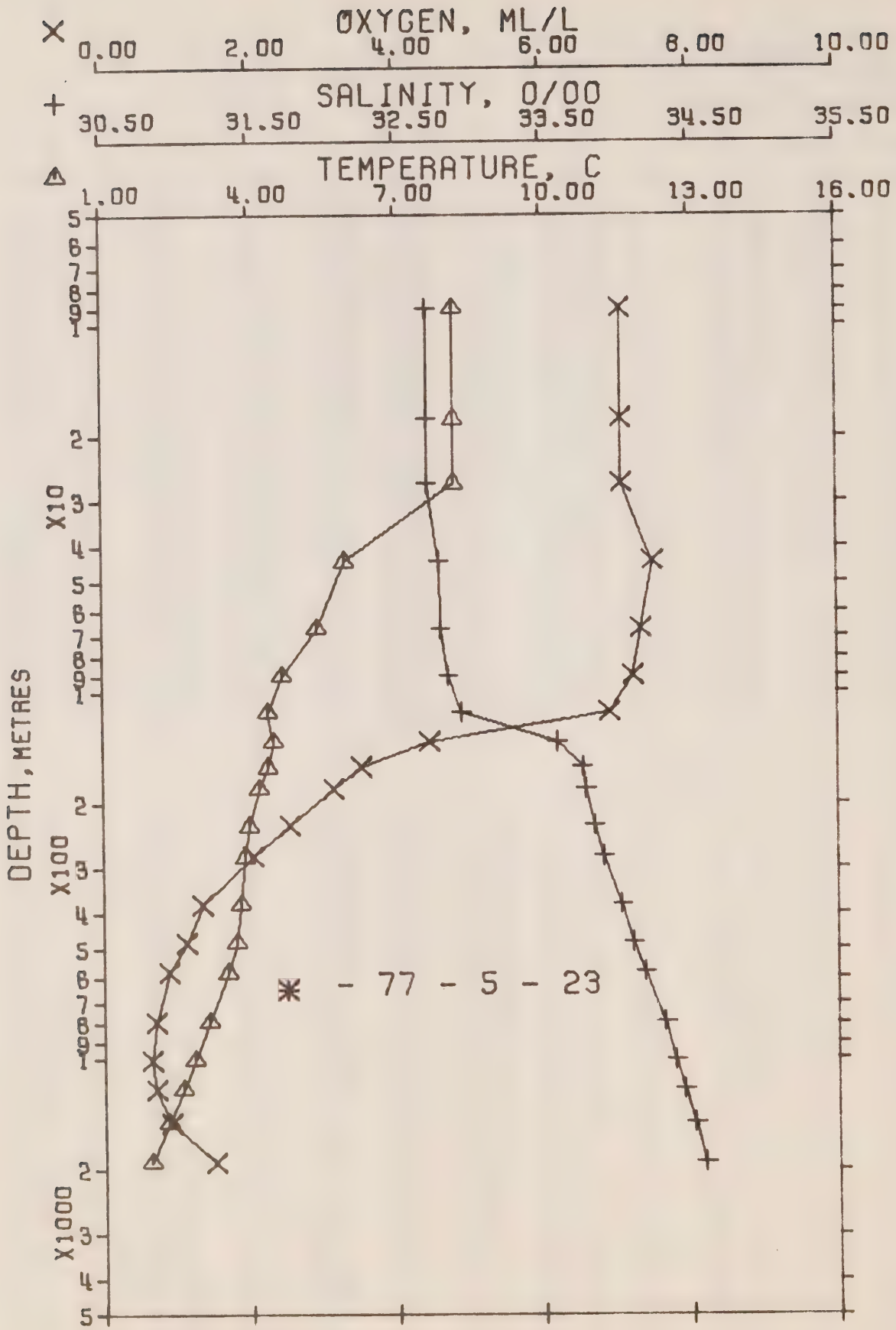
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 17 DATE 22/ 6/77 GMT 17.7
POSITION 50- .0 N, 145- .0 W STATION P
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	8.86	32.712	0	25.373	261.1	8.86	261.1	.00	.00	6.85	1483.
10	8.81	32.710	10	25.380	260.7	8.81	260.5	.26	.01	6.81	1483.
19	8.78	32.712	19	25.386	260.3	8.78	259.9	.50	.05	6.81	1483.
29	8.78	32.758	29	25.708	229.7	6.78	229.3	.75	.11	7.18	1476.
48	5.94	32.784	48	25.835	217.8	5.94	217.2	1.18	.28	7.35	1473.
71	5.26	32.790	71	25.920	209.9	5.25	209.1	1.67	.58	7.22	1470.
96	4.68	32.922	95	26.089	194.0	4.67	193.1	2.16	1.00	6.62	1468.
120	4.48	33.455	119	26.532	152.1	4.47	151.0	2.58	1.45	4.78	1469.
143	4.38	33.742	142	26.770	129.8	4.37	128.4	2.90	1.89	3.53	1469.
167	4.23	33.815	166	26.844	123.0	4.22	121.4	3.21	2.37	3.19	1469.
191	4.01	33.816	190	26.867	120.9	4.00	119.1	3.50	2.91	2.77	1468.
239	3.87	33.947	237	26.985	110.0	3.85	107.9	4.05	4.10	2.31	1469.
287	3.78	33.935+	285	26.985	110.4	3.76	107.9	4.58	5.54	1.84	1469.
385	3.80	34.058	382	27.080	102.2	3.77	98.8	5.62	9.10	1.31	1471.
485	3.66	34.140	481	27.159	95.4	3.63	91.2	6.61	13.46	1.05	1472.
589	3.51	34.202	584	27.223	90.0	3.47	85.1	7.57	18.74	.93	1473.
810	3.11	34.331	803	27.364	77.7	3.05	71.7	9.42	31.87	.70	1475.
1011	2.82	34.396	1001	27.442	71.0	2.75	64.2	10.91	45.65	.67	1478.
1212	2.57	34.449	1200	27.506	65.5	2.49	58.1	12.28	61.21	.75	1480.
1515	2.28	34.515	1498	27.583	58.9	2.18	50.7	14.15	87.25	.91	1484.
2023	1.91	34.588	1998	27.671	51.3	1.77	42.1	16.96	137.71	1.59	1491.
2532	1.71	34.633	2498	27.722	47.3	1.53	37.0	19.45	195.65	2.11	1498.
3041	1.58	34.661*	2997	27.754	45.1	1.35	33.7	21.80	262.29	2.68	1507.
3551	1.52	34.684	3495	27.777	44.0	1.24	31.2	24.06	338.41	2.99	1515.
4058	1.51	34.737*	3990	27.820	41.4	1.18	26.8	26.24	422.76	2.90+	1524.
4159	1.52	34.747+	4088	27.827	41.2	1.18	26.0	26.66	440.11	3.38	1526.
4250	1.54	34.695*	4177	27.784	45.3	1.19	30.0	27.05	457.07	3.36*	1527.
4260	1.53	34.690	4186	27.781	45.5	1.18	30.3	27.09	458.89	3.36	1527.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	8.86	32.712	0	25.373	261.1	8.86	261.1	.00	.00	6.85	1483.
10	8.81	32.710	10	25.380	260.7	8.81	260.5	.26	.01	6.81	1483.
20	8.57	32.717	20	25.422	256.8	8.57	256.5	.53	.05	6.85	1482.
30	6.73	32.759	30	25.715	229.1	6.73	228.6	.77	.12	7.18	1476.
50	5.88	32.785	50	25.843	217.1	5.88	216.5	1.21	.30	7.34	1472.
75	5.16	32.812	75	25.948	207.2	5.16	206.4	1.75	.64	7.12	1470.
100	4.64	33.028	99	26.177	185.7	4.63	184.7	2.24	1.08	6.26	1469.
125	4.46	33.524	124	26.589	146.8	4.45	145.6	2.66	1.55	4.48	1469.
150	4.33	33.764	149	26.793	127.7	4.32	126.2	2.99	2.02	3.43	1469.
175	4.16	33.815	174	26.852	122.3	4.14	120.6	3.30	2.54	3.05	1469.
200	3.98	33.842	199	26.891	118.7	3.97	116.9	3.61	3.12	2.68	1468.
225	3.91	33.912	223	26.954	112.9	3.89	110.9	3.90	3.74	2.43	1469.
250	3.85	33.944	248	26.985	110.1	3.83	107.9	4.17	4.41	2.19	1469.
300	3.78	33.953	298	26.999	109.2	3.76	106.6	4.72	5.96	1.76	1469.
400	3.78	34.072	397	27.093	101.0	3.75	97.6	5.77	9.70	1.27	1471.
500	3.64	34.150	496	27.169	94.5	3.60	90.3	6.75	14.18	1.03	1472.
600	3.49	34.209	595	27.231	89.3	3.45	84.3	7.67	19.33	.91	1473.
700	3.29	34.272	694	27.299	83.3	3.25	77.9	8.53	25.04	.80	1474.
800	3.13	34.326	793	27.358	78.2	3.07	72.3	9.34	31.20	.71	1475.
900	2.97	34.362	892	27.401	74.5	2.91	68.2	10.10	37.80	.68	1476.
1000	2.83	34.393	990	27.438	71.3	2.77	64.6	10.83	44.86	.67	1477.
1200	2.58	34.446	1188	27.502	65.8	2.50	58.4	12.20	60.20	.75	1480.
1500	2.29	34.512	1483	27.580	59.2	2.19	51.0	14.07	85.91	.90	1484.
2000	1.92	34.585	1976	27.667	51.6	1.79	42.4	16.84	135.30	1.56	1490.
2500	1.72	34.630	2467	27.719	47.5	1.54	37.3	19.30	191.75	2.08	1498.
3000	1.59	34.659	2957	27.751	45.3	1.37	34.0	21.61	256.52	2.64	1506.
3500	1.53	34.682	3445	27.775	44.1	1.26	31.5	23.84	330.34	2.96	1514.
4000	1.51	34.731	3934	27.816	41.7	1.19	27.2	26.00	412.79	2.91	1523.
4100	1.51	34.741	4031	27.823	41.3	1.18	26.4	26.41	429.91	3.10	1525.
4200	1.53	34.724	4128	27.808	43.0	1.18	27.8	26.83	447.44	3.37	1526.


OXYGEN, ML/L
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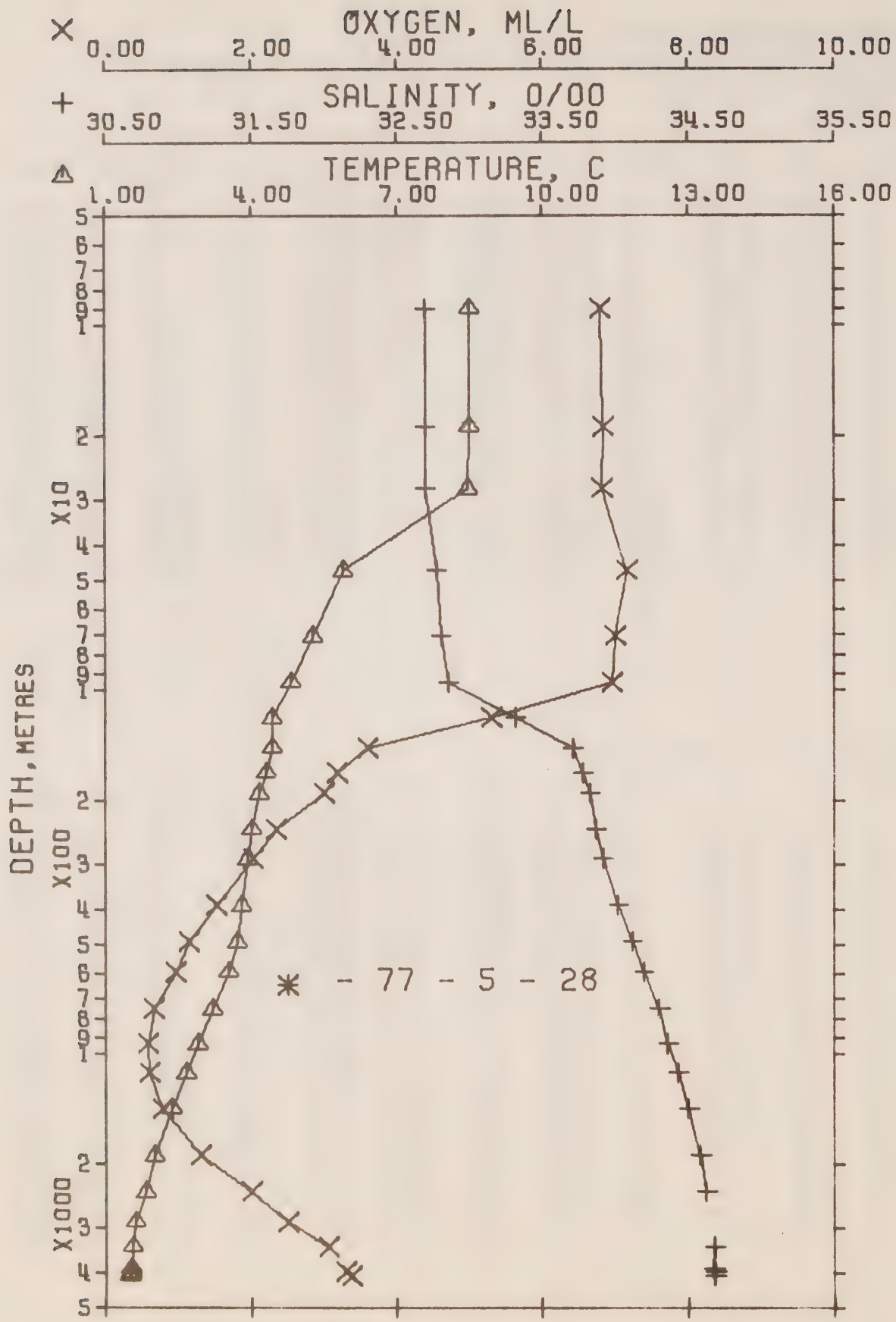
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 23 DATE 28/ 6/77 GMT 18.1
POSITION 50- .0 N, 145- .0 W STATION P
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	8.25	32.720	0	25.472	251.8	8.25	251.8	.00	.00	7.08	1481.
9	8.21	32.716	9	25.475	251.6	8.21	251.5	.23	.01	7.08	1481.
18	8.19	32.720	18	25.481	251.2	8.19	250.9	.46	.04	7.08	1481.
27	8.19	32.718	27	25.479	251.5	8.19	251.0	.68	.09	7.08	1481.
44	5.95	32.798	44	25.845	216.8	5.95	216.3	1.08	.24	7.51	1473.
67	5.38	32.815	67	25.926	209.3	5.37	208.6	1.58	.52	7.33	1471.
91	4.65	32.857	90	26.041	198.5	4.64	197.7	2.05	.90	7.23	1468.
114	4.37	32.952	113	26.145	188.7	4.36	187.7	2.50	1.37	6.89	1468.
137	4.49	33.600	136	26.646	141.5	4.48	140.2	2.88	1.85	4.44	1469.
161	4.35	33.766	160	26.792	127.8	4.34	126.3	3.20	2.34	3.53	1469.
184	4.19	33.791	183	26.829	124.5	4.18	122.8	3.50	2.86	3.15	1469.
233	3.96	33.855	231	26.903	117.8	3.94	115.7	4.08	4.10	2.53	1469.
282	3.88	33.914	280	26.958	112.9	3.86	110.5	4.65	5.60	2.03	1469.
382	3.79	34.027	379	27.057	104.4	3.76	101.0	5.73	9.26	1.34	1471.
484	3.71	34.110	480	27.131	98.1	3.68	94.0	6.77	13.82	1.12	1472.
587	3.53	34.194	582	27.215	90.8	3.49	85.9	7.74	19.12	.89	1473.
797	3.14	34.319	790	27.351	78.8	3.09	72.9	9.51	31.60	.71	1475.
1015	2.84	34.386	1005	27.432	72.0	2.77	65.1	11.15	46.69	.65	1478.
1222	2.59	34.450	1209	27.505	65.7	2.51	58.2	12.57	62.89	.70	1480.
1512	2.30	34.516	1495	27.582	59.0	2.20	50.7	14.37	87.99	.91	1484.
1939	1.93	34.592	1916	27.672	51.0	1.80	42.0	16.73	129.33	1.51	1489.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	8.25	32.720	0	25.472	251.8	8.25	251.8	.00	.00	7.08	1481.
10	8.21	32.717	10	25.476	251.6	8.21	251.4	.25	.01	7.08	1481.
20	8.19	32.720	20	25.481	251.3	8.19	250.9	.50	.05	7.08	1481.
30	7.74	32.734	30	25.558	244.1	7.73	243.6	.75	.12	7.17	1479.
50	5.79	32.803	50	25.868	214.6	5.78	214.0	1.21	.30	7.46	1472.
75	5.12	32.830	75	25.968	205.3	5.11	204.6	1.73	.63	7.29	1470.
100	4.53	32.898	99	26.086	194.2	4.52	193.3	2.23	1.08	7.08	1468.
125	4.43	33.282	124	26.400	164.7	4.42	163.5	2.70	1.61	5.64	1468.
150	4.41	33.693	149	26.728	133.8	4.40	132.4	3.06	2.11	3.93	1469.
175	4.25	33.781	174	26.815	125.8	4.24	124.1	3.38	2.65	3.29	1469.
200	4.11	33.813	199	26.855	122.1	4.10	120.3	3.69	3.24	2.93	1469.
225	3.99	33.846	223	26.892	118.7	3.98	116.7	3.99	3.89	2.62	1469.
250	3.93	33.877	248	26.924	116.0	3.91	113.7	4.28	4.60	2.35	1469.
300	3.86	33.937	298	26.978	111.2	3.84	108.6	4.85	6.19	1.89	1470.
400	3.77	34.043	397	27.071	103.1	3.75	99.7	5.92	10.00	1.30	1471.
500	3.68	34.124	496	27.145	96.9	3.64	92.6	6.92	14.60	1.08	1472.
600	3.50	34.203	595	27.225	89.9	3.46	85.0	7.86	19.83	.88	1473.
700	3.31	34.266	694	27.294	83.9	3.26	78.4	8.72	25.58	.79	1474.
800	3.14	34.320	793	27.353	78.7	3.08	72.8	9.53	31.77	.71	1475.
900	2.99	34.353	892	27.392	75.4	2.93	69.0	10.30	38.44	.68	1476.
1000	2.86	34.382	990	27.427	72.4	2.79	65.6	11.04	45.59	.65	1478.
1200	2.61	34.444	1189	27.498	66.3	2.53	58.8	12.43	61.14	.69	1480.
1500	2.31	34.514	1485	27.579	59.3	2.21	51.0	14.31	86.93	.90	1484.


OXYGEN, ML/L
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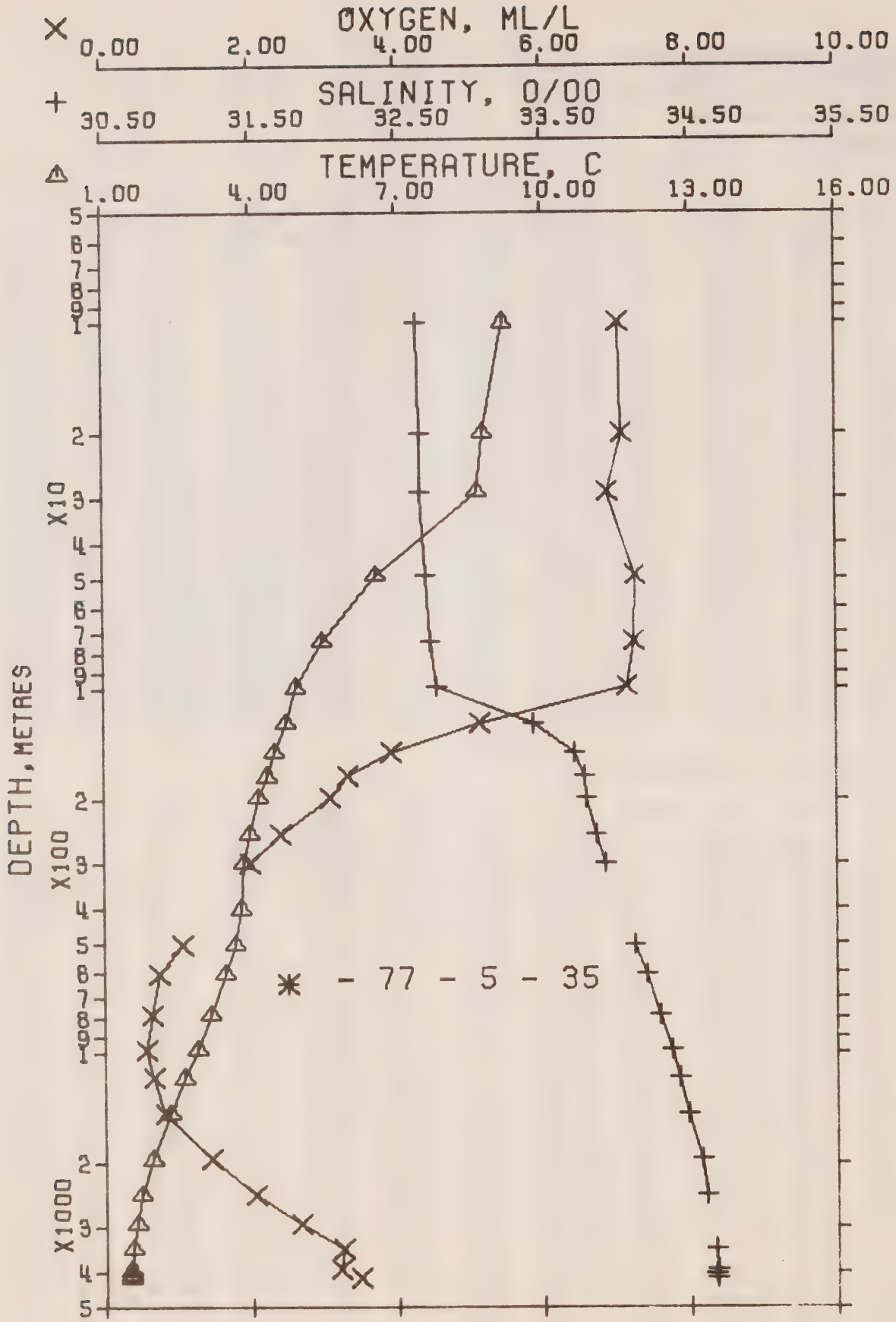
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 28 DATE 6/ 7/77 GMT 17.5
POSITION 50- .0 N, 145- .0 W STATION P
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	8.55	32.697	0	25.409	257.7	8.55	257.7	.00	.00	6.81	1482.
9	8.50	32.697	9	25.417	257.2	8.50	257.0	.23	.01	6.81	1482.
19	8.51	32.697	19	25.415	257.5	8.51	257.1	.49	.05	6.84	1482.
28	8.46	32.700	28	25.425	256.7	8.46	256.2	.73	.10	6.83	1482.
47	5.89	32.782	47	25.839	217.4	5.89	216.8	1.18	.28	7.17	1472.
71	5.26	32.806	71	25.933	208.7	5.25	207.9	1.69	.59	7.00	1470.
96	4.81	32.864	95	26.029	199.7	4.80	198.8	2.19	1.01	6.96	1469.
120	4.41	33.318	119	26.431	161.7	4.40	160.6	2.62	1.49	5.29	1468.
145	4.42	33.709	144	26.740	132.7	4.41	131.3	2.99	1.98	3.59	1469.
169	4.29	33.785	168	26.814	125.9	4.28	124.2	3.30	2.48	3.19	1469.
193	4.16	33.831	192	26.864	121.3	4.15	119.5	3.60	3.03	2.99	1469.
243	3.99	33.874	241	26.915	116.7	3.97	114.6	4.19	4.34	2.34	1469.
293	3.90	33.918	291	26.959	112.9	3.88	110.3	4.77	5.92	2.03	1470.
393	3.80	34.020	390	27.050	105.1	3.77	101.6	5.86	9.72	1.53	1471.
496	3.69	34.117	492	27.138	97.5	3.66	93.2	6.90	14.45	1.13	1472.
599	3.51	34.199	594	27.221	90.3	3.47	85.3	7.87	19.84	.95	1473.
760	3.18	34.302	753	27.334	80.2	3.13	74.5	9.23	29.29	.66	1475.
947	2.88	34.358	938	27.406	74.1	2.82	67.6	10.67	41.81	.58	1477.
1137	2.66	34.434	1126	27.486	67.2	2.58	60.0	12.02	56.05	.60	1479.
1428	2.34	34.502	1413	27.568	60.1	2.24	52.1	13.86	80.15	.78	1483.
1924	1.99	34.581	1901	27.659	52.4	1.86	43.3	16.64	127.57	1.29	1489.
2430	1.81	34.623	2398	27.706	49.0	1.64	38.5	19.21	184.43	2.00	1497.
2940	1.60	34.652*	2898	27.746	45.7	1.38	34.5	21.61	250.24	2.51	1505.
3448	1.53	34.677	3394	27.771	44.4	1.27	31.9	23.88	324.05	3.06	1513.
3948	1.51	34.666+	3882	27.763	46.1	1.19	32.2	26.18	410.82	3.26*	1522.
4046	1.50	34.685	3978	27.779	44.9	1.17	30.7	26.63	429.07	3.30	1523.
4134	1.49	34.685*	4064	27.780	44.9	1.15	30.5	27.03	445.56	3.37*	1525.
4144	1.52	34.685	4073	27.778	45.4	1.18	30.7	27.07	447.32	3.38	1525.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	8.55	32.697	0	25.409	257.7	8.55	257.7	.00	.00	6.81	1482.
10	8.50	32.697	10	25.417	257.2	8.50	257.0	.26	.01	6.81	1482.
20	8.50	32.697	20	25.416	257.4	8.50	257.0	.51	.05	6.83	1482.
30	8.15	32.710	30	25.479	251.6	8.15	251.1	.77	.12	6.87	1481.
50	5.81	32.785	50	25.852	216.2	5.80	215.6	1.24	.31	7.14	1472.
75	5.19	32.816	75	25.949	207.2	5.18	206.4	1.77	.64	6.99	1470.
100	4.73	32.954	99	26.109	192.1	4.72	191.2	2.27	1.09	6.63	1469.
125	4.41	33.405	124	26.500	155.2	4.40	154.0	2.70	1.59	4.91	1468.
150	4.39	33.726	149	26.756	131.2	4.38	129.7	3.06	2.08	3.50	1469.
175	4.26	33.797	174	26.826	124.7	4.24	123.0	3.38	2.61	3.14	1469.
200	4.13	33.837	199	26.871	120.6	4.12	118.7	3.68	3.19	2.90	1469.
225	4.05	33.860	223	26.898	118.3	4.03	116.2	3.98	3.84	2.56	1469.
250	3.98	33.881	248	26.922	116.1	3.96	113.9	4.27	4.55	2.30	1469.
300	3.89	33.926	298	26.966	112.3	3.87	109.7	4.85	6.15	1.99	1470.
400	3.79	34.027	398	27.057	104.5	3.76	101.0	5.93	10.02	1.50	1471.
500	3.68	34.120	496	27.142	97.2	3.65	92.9	6.94	14.64	1.13	1472.
600	3.51	34.200	595	27.222	90.2	3.47	85.3	7.87	19.89	.95	1474.
700	3.29	34.266	694	27.295	83.7	3.25	78.3	8.74	25.64	.76	1474.
800	3.11	34.315	793	27.351	78.8	3.06	72.9	9.55	31.82	.64	1475.
900	2.95	34.345	892	27.390	75.5	2.89	69.2	10.32	38.50	.60	1476.
1000	2.81	34.381	990	27.430	72.0	2.75	65.4	11.06	45.65	.59	1477.
1200	2.58	34.450	1188	27.505	65.5	2.50	58.1	12.43	60.99	.65	1480.
1500	2.28	34.515	1483	27.583	58.9	2.18	50.7	14.29	86.50	.87	1484.
2000	1.96	34.588	1976	27.667	51.9	1.82	42.5	17.04	135.48	1.41	1491.
2500	1.78	34.627	2467	27.712	48.5	1.60	37.9	19.55	192.99	2.07	1498.
3000	1.59	34.656	2956	27.749	45.5	1.37	34.2	21.89	258.48	2.58	1506.
3500	1.53	34.676	3444	27.770	44.6	1.26	31.9	24.12	332.31	3.09	1514.
4000	1.50	34.676	3933	27.772	45.4	1.18	31.4	26.42	420.54	3.28	1523.
4100	1.49	34.685	4031	27.780	44.9	1.16	30.6	26.87	439.11	3.34	1524.


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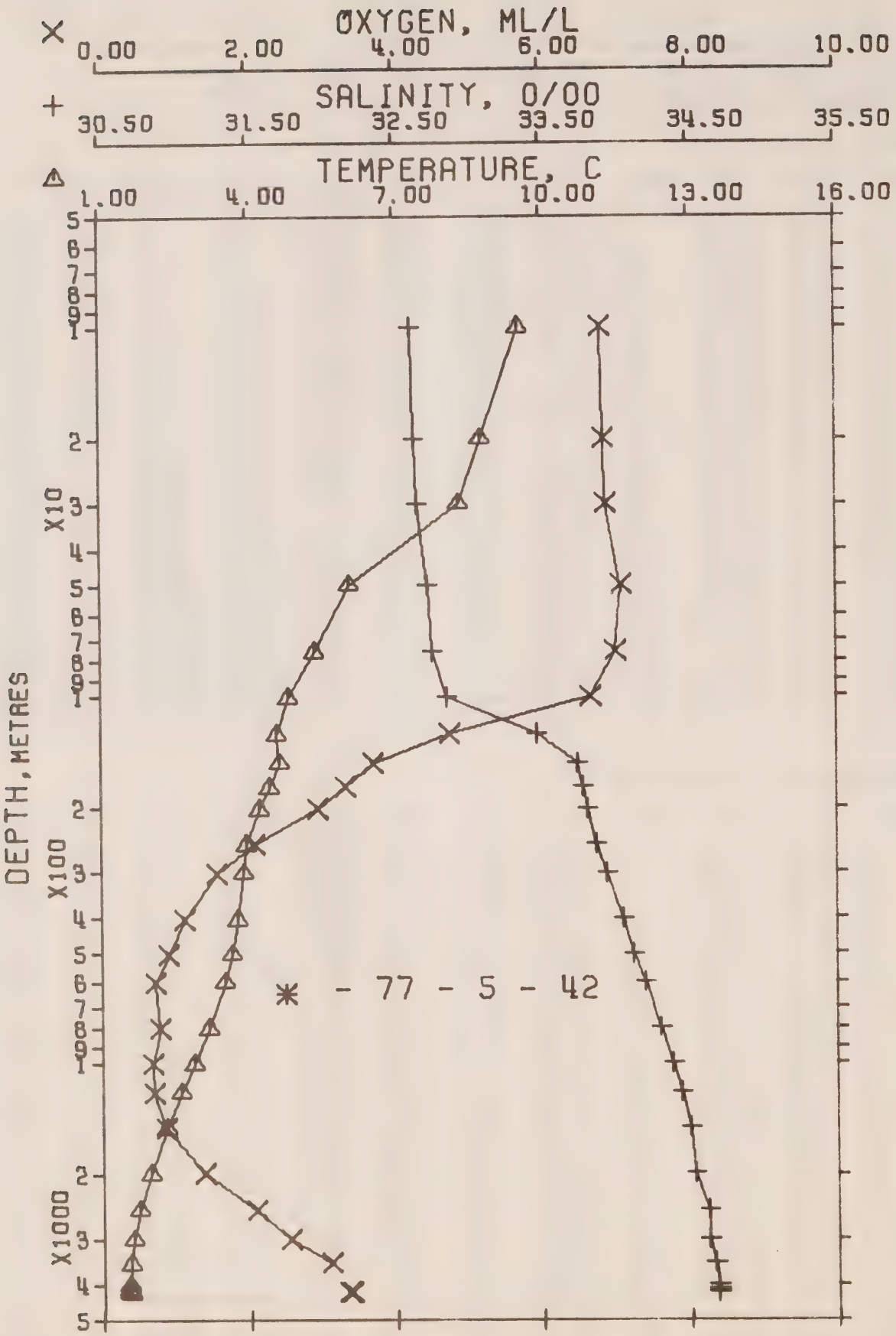
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 35 DATE 12/ 7/77 GMT 17.6
POSITION 50- .0 N, 145- .0 W STATION P
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	9.19	32.654	0	25.277	270.3	9.19	270.3	.00	.00	7.04	1484.
10	9.21	32.652	10	25.272	271.0	9.21	270.8	.27	.01	7.06	1485.
20	8.79	32.667	20	25.349	263.8	8.79	263.4	.54	.06	7.11	1483.
29	8.68	32.668	29	25.367	262.3	8.68	261.7	.78	.12	6.90	1483.
49	6.59	32.710	49	25.695	231.2	6.59	230.5	1.28	.31	7.29	1475.
74	5.47	32.745	74	25.860	215.6	5.46	214.8	1.84	.67	7.25	1471.
100	4.94	32.782	99	25.950	207.3	4.93	206.3	2.38	1.15	7.16	1469.
125	4.71	33.439	124	26.494	155.8	4.70	154.5	2.84	1.67	5.13	1470.
150	4.48	33.721	149	26.743	132.5	4.47	131.0	3.20	2.18	3.91	1470.
175	4.32	33.788	174	26.813	126.0	4.31	124.3	3.52	2.71	3.33	1469.
200	4.15	33.799	199	26.839	123.6	4.14	121.8	3.84	3.31	3.07	1469.
252	3.97	33.871	250	26.915	116.8	3.95	114.6	4.46	4.74	2.41	1469.
303	3.86	33.927	301	26.970	111.9	3.84	109.3	5.04	6.40	1.97	1470.
405	3.78	34.040*	402	27.068	103.5	3.75	100.0	6.14	10.35	1.46*	1471.
508	3.66	34.128	504	27.150	96.5	3.62	92.1	7.17	15.14	1.05	1473.
610	3.47	34.207	605	27.231	89.3	3.43	84.4	8.12	20.54	.74	1474.
789	3.16	34.302	782	27.336	80.2	3.11	74.3	9.63	31.31	.63	1475.
986	2.88	34.378	976	27.422	72.8	2.81	66.1	11.13	44.85	.56	1477.
1182	2.61	34.432	1170	27.489	67.0	2.53	59.7	12.50	59.98	.65	1480.
1480	2.31	34.492	1464	27.562	60.8	2.21	52.6	14.40	85.75	.83	1483.
1980	1.96	34.576	1956	27.657	52.6	1.82	43.4	17.23	135.56	1.44	1490.
2484	1.73	34.611	2451	27.703	49.0	1.55	38.8	19.78	193.58	2.05	1498.
2993	1.62	34.641*	2950	27.735	47.0	1.40	35.5	22.22	261.73	2.65	1506.
3506	1.53	34.666	3451	27.762	45.3	1.26	32.7	24.59	339.97	3.23	1514.
4020	1.52	34.678	3953	27.772	45.6	1.19	31.3	26.91	429.26	3.20+	1523.
4123	1.51	34.666*	4053	27.763	46.5	1.17	32.1	27.38	448.87	3.35*	1525.
4215	1.52	34.679	4143	27.773	46.0	1.17	31.1	27.81	467.08	3.48	1526.
4226	1.52	34.680*	4153	27.773	46.0	1.17	31.1	27.86	469.12	3.48*	1527.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	9.19	32.654	0	25.277	270.3	9.19	270.3	.00	.00	7.04	1484.
10	9.21	32.652	10	25.272	271.0	9.21	270.8	.27	.01	7.06	1485.
20	8.79	32.667	20	25.349	263.8	8.79	263.4	.54	.06	7.11	1483.
30	8.57	32.670	30	25.385	260.5	8.57	260.0	.80	.12	6.92	1483.
50	6.55	32.711	50	25.701	230.6	6.55	230.0	1.29	.32	7.29	1475.
75	5.46	32.746	75	25.863	215.4	5.45	214.6	1.85	.68	7.25	1471.
100	4.94	32.782	99	25.950	207.3	4.93	206.3	2.38	1.15	7.16	1469.
125	4.71	33.439	124	26.494	155.8	4.70	154.5	2.84	1.67	5.13	1470.
150	4.48	33.721	149	26.743	132.5	4.47	131.0	3.20	2.18	3.91	1470.
175	4.32	33.788	174	26.813	126.0	4.31	124.3	3.52	2.71	3.33	1469.
200	4.15	33.799	199	26.839	123.6	4.14	121.8	3.84	3.31	3.07	1469.
225	4.06	33.835	224	26.878	120.2	4.04	118.1	4.14	3.96	2.74	1469.
250	3.98	33.869	248	26.912	117.1	3.96	114.8	4.43	4.68	2.43	1469.
300	3.87	33.924	298	26.967	112.2	3.85	109.6	5.01	6.29	2.00	1470.
400	3.78	34.035	397	27.064	103.9	3.76	100.4	6.09	10.13	1.48	1471.
500	3.67	34.122	496	27.144	97.0	3.63	92.7	7.09	14.73	1.08	1472.
600	3.49	34.200	595	27.224	90.0	3.45	85.1	8.02	19.97	.77	1473.
700	3.30	34.258	694	27.287	84.4	3.26	79.0	8.89	25.74	.68	1474.
800	3.14	34.307	794	27.341	79.8	3.09	73.8	9.71	32.01	.63	1475.
900	2.99	34.347	891	27.387	75.8	2.93	69.5	10.49	38.74	.59	1476.
1000	2.86	34.382	990	27.428	72.4	2.79	65.6	11.23	45.91	.56	1478.
1200	2.59	34.436	1188	27.494	66.6	2.51	59.2	12.62	61.44	.66	1480.
1500	2.29	34.496	1486	27.566	60.4	2.19	52.2	14.52	87.57	.86	1484.
2000	1.95	34.578	1975	27.659	52.5	1.81	43.2	17.34	137.68	1.46	1491.
2500	1.73	34.612	2466	27.704	48.9	1.55	38.7	19.86	195.55	2.07	1498.
3000	1.62	34.641	2957	27.735	46.9	1.40	35.5	22.25	262.68	2.66	1506.
3500	1.53	34.666	3446	27.762	45.3	1.26	32.7	24.56	339.02	3.23	1514.
4000	1.52	34.678	3934	27.772	45.6	1.20	31.4	26.82	425.46	3.20	1523.
4100	1.51	34.669	4031	27.765	46.3	1.18	31.9	27.28	444.39	3.32	1524.
4200	1.52	34.677	4128	27.771	46.1	1.17	31.3	27.74	464.03	3.46	1526.


OXYGEN, ML/L
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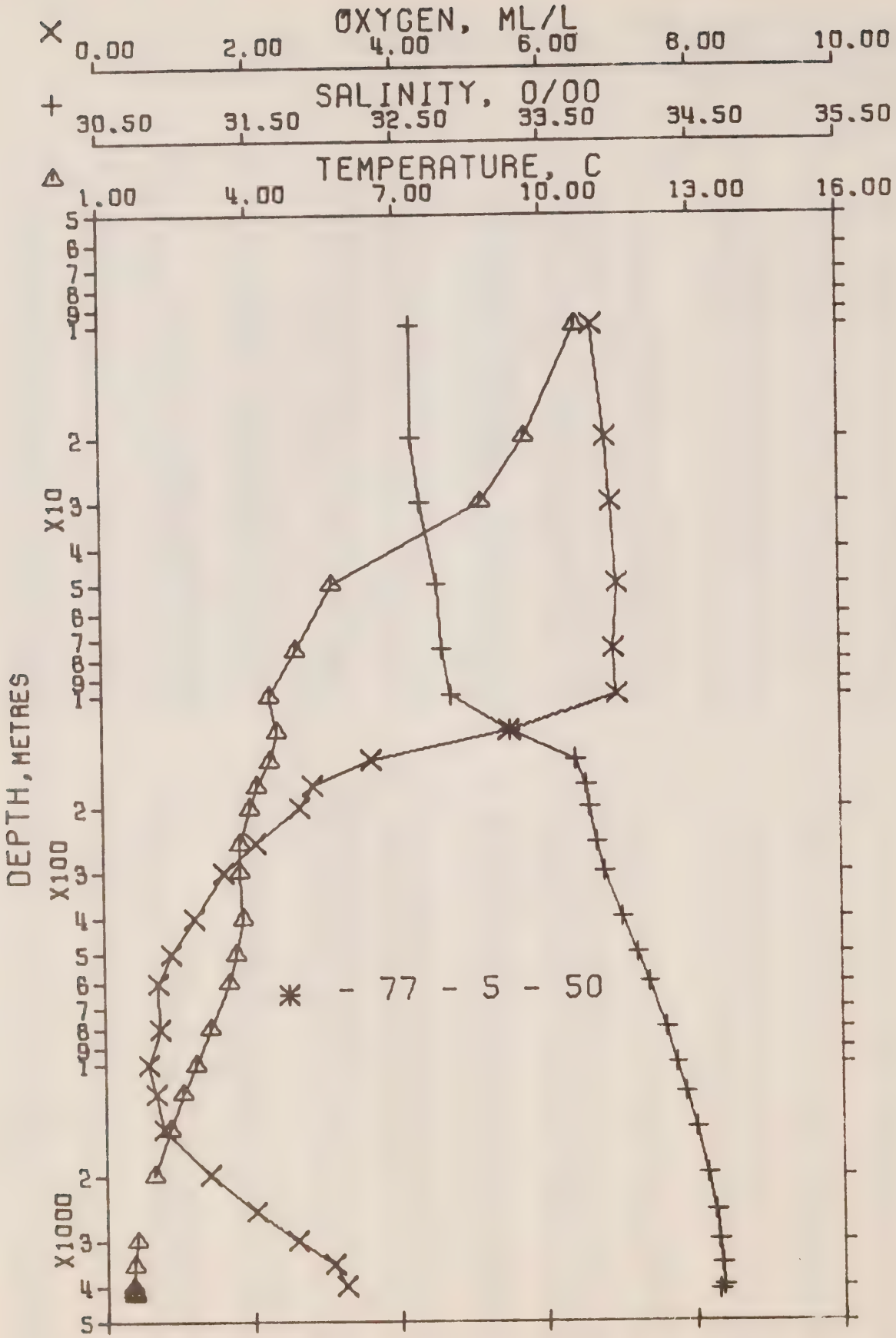
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 42 DATE 18/ 7/77 GMT 17.7
POSITION 50- .0 N, 145- .0 W STATION P
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	10.42	32.630	0	25.056	291.4	10.42	291.4	.00	.00	6.71	1489.
10	9.54	32.616	10	25.191	278.7	9.54	278.5	.29	.01	6.81	1486.
20	8.76	32.642	20	25.334	265.2	8.76	264.8	.56	.06	6.87	1483.
30	8.33	32.658	30	25.412	258.0	8.33	257.5	.82	.12	6.89	1482.
50	6.07	32.735	50	25.780	223.0	6.07	222.4	1.31	.32	7.08	1473.
76	5.35	32.763	76	25.888	212.9	5.34	212.1	1.88	.69	7.00	1471.
102	4.82	32.856	101	26.021	200.4	4.81	199.5	2.40	1.16	6.66	1469.
128	4.57	33.470	127	26.534	152.0	4.56	150.8	2.86	1.70	4.74	1469.
153	4.64	33.738	152	26.739	132.9	4.63	131.3	3.22	2.21	3.70	1470.
178	4.41	33.783	177	26.799	127.4	4.40	125.6	3.54	2.76	3.32	1470.
204	4.22	33.815	203	26.845	123.2	4.21	121.3	3.87	3.40	2.93	1470.
255	3.93	33.870	253	26.918	116.5	3.91	114.3	4.48	4.81	2.07	1469.
306	3.87	33.945	304	26.984	110.7	3.85	108.0	5.06	6.48	1.56	1470.
408	3.77	34.047	405	27.075	102.9	3.74	99.3	6.15	10.44	1.12	1471.
508	3.64	34.125	504	27.149	96.5	3.60	92.2	7.14	15.09	.91	1472.
606	3.49	34.204	601	27.227	89.7	3.45	84.8	8.05	20.27	.72	1474.
810	3.16	34.305	803	27.338	80.1	3.10	74.1	9.78	32.72	.79	1476.
1010	2.85	34.383	1000	27.429	72.3	2.78	65.5	11.30	46.77	.69	1478.
1210	2.59	34.441	1198	27.498	66.3	2.51	58.8	12.69	62.45	.70	1480.
1514	2.30	34.505	1497	27.573	59.8	2.20	51.6	14.59	88.88	.86	1484.
2022	1.95	34.535	1997	27.625	55.7	1.81	46.4	17.52	141.70	1.37	1491.
2533	1.73	34.622	2499	27.712	48.4	1.55	38.0	20.20	203.68	2.08	1499.
3046	1.59	34.617	3002	27.718	48.4	1.36	37.1	22.65	273.49	2.55	1507.
3559	1.54	34.659	3503	27.755	46.1	1.26	33.2	25.08	355.22	3.10	1515.
4071	1.52	34.678	4002	27.772	45.7	1.19	31.3	27.42	446.26	3.30 *	1524.
4173	1.52	34.679	4102	27.773	45.9	1.18	31.2	27.89	466.04	3.34 *	1526.
4265	1.52	34.682	4191	27.775	45.9	1.17	30.9	28.31	484.10	3.37	1527.
4275	1.53	34.685	4201	27.777	45.9	1.17	30.7	28.36	486.15	3.34	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	10.42	32.630	0	25.056	291.4	10.42	291.4	.00	.00	6.71	1489.
10	9.54	32.616	10	25.191	278.7	9.54	278.5	.29	.01	6.81	1486.
20	8.76	32.642	20	25.334	265.2	8.76	264.8	.56	.06	6.87	1483.
30	8.33	32.658	30	25.412	258.0	8.33	257.5	.82	.12	6.89	1482.
50	6.07	32.735	50	25.780	223.0	6.07	222.4	1.31	.32	7.08	1473.
75	5.38	32.762	75	25.883	213.4	5.38	212.6	1.85	.66	7.01	1471.
100	4.85	32.851	99	26.014	201.2	4.84	200.2	2.36	1.13	6.68	1469.
125	4.59	33.410	124	26.484	156.8	4.59	155.5	2.82	1.64	4.93	1469.
150	4.63	33.708	149	26.716	135.1	4.62	133.5	3.18	2.15	3.82	1470.
175	4.44	33.778	174	26.792	128.0	4.42	126.3	3.50	2.69	3.36	1470.
200	4.25	33.810	199	26.837	123.9	4.24	122.0	3.82	3.29	2.99	1470.
225	4.09	33.839	224	26.877	120.3	4.08	118.2	4.12	3.95	2.56	1469.
250	3.96	33.865	248	26.912	117.1	3.94	114.9	4.42	4.67	2.15	1469.
300	3.88	33.936	298	26.976	111.4	3.86	108.7	4.99	6.27	1.62	1470.
400	3.78	34.040	397	27.068	103.4	3.75	99.9	6.06	10.09	1.15	1471.
500	3.65	34.119	496	27.144	96.9	3.61	92.7	7.06	14.68	.92	1472.
600	3.50	34.199	595	27.222	90.1	3.46	85.2	8.00	19.92	.73	1473.
700	3.33	34.254	694	27.282	85.0	3.28	79.5	8.87	25.71	.75	1474.
800	3.17	34.300	794	27.334	80.6	3.12	74.6	9.70	32.03	.78	1476.
900	3.01	34.342	891	27.382	76.4	2.95	70.0	10.48	38.83	.74	1477.
1000	2.86	34.380	991	27.425	72.6	2.80	65.8	11.23	46.04	.69	1478.
1200	2.60	34.438	1189	27.495	66.6	2.52	59.2	12.62	61.60	.70	1480.
1500	2.31	34.502	1485	27.570	60.1	2.21	51.9	14.51	87.62	.85	1484.
2000	1.96	34.534	1975	27.623	55.8	1.83	46.6	17.40	139.22	1.35	1491.
2500	1.74	34.617	2466	27.707	48.8	1.57	38.5	20.04	199.56	2.04	1498.
3000	1.60	34.617	2956	27.718	48.4	1.38	37.2	22.42	266.56	2.51	1506.
3500	1.55	34.654	3445	27.751	46.3	1.27	33.7	24.81	345.41	3.04	1514.
4000	1.52	34.676	3934	27.770	45.8	1.20	31.6	27.10	432.97	3.28	1523.
4100	1.52	34.678	4031	27.772	45.8	1.19	31.3	27.55	451.86	3.31	1524.
4200	1.52	34.680	4128	27.774	45.9	1.17	31.1	28.01	471.27	3.35	1526.


OXYGEN, ML/L
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SALINITY, O/OO
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TEMPERATURE, C
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DEPTH, METRES
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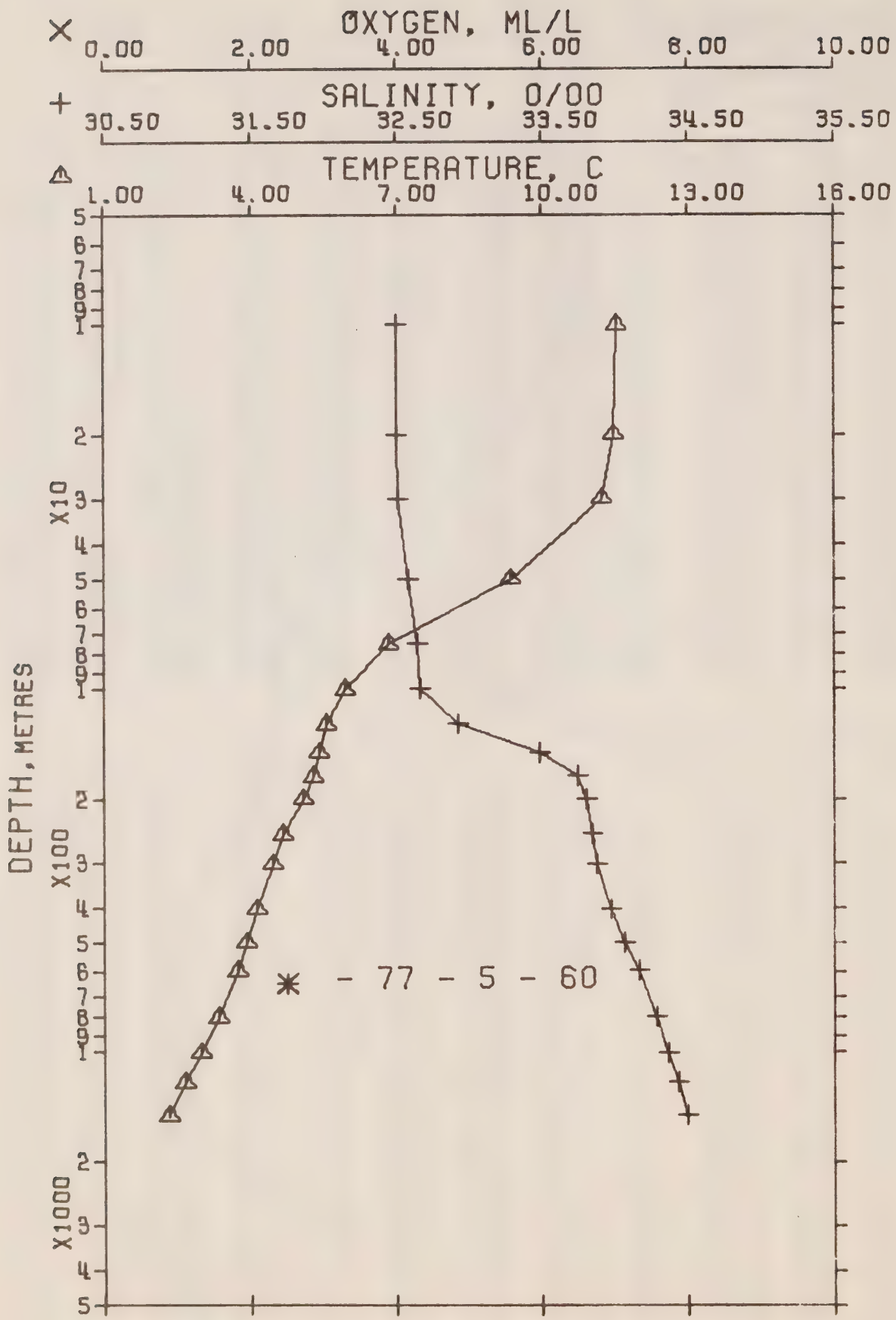
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 50 DATE 25/ 7/77 GMT 18.3
POSITION 50- .0 N, 145- .0 W STATION P
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.05	32.590	0	24.915	304.7	11.05	304.7	.00	.00	6.67	1491.
10	10.68	32.612	10	24.997	297.2	10.68	296.9	.30	.02	6.67	1490.
20	9.63	32.612	20	25.173	280.5	9.63	280.1	.59	.06	6.87	1486.
30	8.74	32.669	30	25.358	263.1	8.74	262.5	.87	.13	6.92	1483.
50	5.68	32.783	50	25.865	214.9	5.68	214.3	1.35	.33	7.00	1472.
75	4.93	32.814	75	25.976	204.5	4.92	203.8	1.86	.66	6.93	1469.
101	4.39	32.872	100	26.080	194.8	4.38	193.9	2.36	1.11	6.98	1467.
126	4.55	33.267	125	26.376	167.0	4.54	165.8	2.82	1.63	5.52	1469.
151	4.40	33.711	150	26.743	132.4	4.39	130.9	3.20	2.16	3.65	1469.
176	4.12	33.778	175	26.826	124.7	4.11	123.1	3.52	2.70	2.84	1469.
202	3.97	33.804	201	26.862	121.4	3.96	119.7	3.84	3.32	2.67	1468.
253	3.76	33.848	251	26.918	116.4	3.74	114.3	4.44	4.71	2.07	1468.
303	3.76	33.896	301	26.956	113.2	3.74	110.7	5.02	6.35	1.61	1469.
404	3.81	34.021	401	27.050	105.2	3.78	101.7	6.12	10.32	1.23	1471.
505	3.67	34.124	501	27.146	96.8	3.63	92.5	7.14	15.04	.90	1473.
604	3.51	34.197	599	27.219	90.5	3.47	85.5	8.07	20.28	.73	1474.
805	3.14	34.312	798	27.346	79.4	3.08	73.4	9.77	32.48	.75	1475.
1008	2.84	34.385	998	27.431	72.0	2.77	65.2	11.30	46.58	.58	1478.
1210	2.56	34.445	1198	27.504	65.7	2.48	58.3	12.69	62.32	.69	1480.
1515	2.30	34.506	1498	27.574	59.8	2.20	51.5	14.59	88.67	.77	1484.
2024	1.95	34.579	1999	27.660	52.5	1.81	43.1	17.45	140.17	1.39	1491.
2536	1.75	34.627	2502	27.714	48.3	1.57	37.7	20.02	199.84	2.02	1499.
3049	1.59	34.654	3004	27.748	45.8	1.36	34.3	22.42	268.23	2.58	1507.
3562	1.53	34.668	3506	27.763	45.3	1.25	32.5	24.75	346.73	3.09	1515.
4076	1.51	34.681+	4007	27.775	45.4	1.18	31.0	27.07	437.26	3.25	1524.
4177	1.51	34.655	4106	27.754	47.4	1.17	32.9	27.55	457.14	3.26*	1526.
4270	1.55	34.661	4196	27.756	47.9	1.20	32.6	27.99	476.20	3.26*	1528.
4280	1.53	34.662	4206	27.758	47.5	1.17	32.4	28.04	478.34	3.27*	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.05	32.590	0	24.915	304.7	11.05	304.7	.00	.00	6.67	1491.
10	10.68	32.612	10	24.997	297.2	10.68	296.9	.30	.02	6.67	1490.
20	9.63	32.612	20	25.173	280.5	9.63	280.1	.59	.06	6.87	1486.
30	8.74	32.669	30	25.358	263.1	8.74	262.5	.87	.13	6.92	1483.
50	5.68	32.783	50	25.865	214.9	5.68	214.3	1.35	.33	7.00	1472.
75	4.93	32.814	75	25.976	204.5	4.92	203.8	1.86	.66	6.93	1469.
100	4.40	32.871	99	26.078	195.0	4.39	194.1	2.35	1.10	6.98	1467.
125	4.55	33.255	124	26.367	167.8	4.54	166.6	2.81	1.62	5.56	1469.
150	4.41	33.695	149	26.730	133.7	4.39	132.2	3.18	2.14	3.72	1469.
175	4.13	33.775	174	26.822	125.0	4.12	123.4	3.50	2.67	2.87	1469.
200	3.98	33.802	199	26.859	121.7	3.97	120.0	3.81	3.26	2.68	1468.
225	3.87	33.825	223	26.888	119.1	3.85	117.1	4.11	3.91	2.38	1468.
250	3.77	33.846	248	26.915	116.7	3.75	114.6	4.41	4.62	2.10	1468.
300	3.76	33.893	298	26.953	113.4	3.74	110.9	4.98	6.23	1.64	1469.
400	3.81	34.016	397	27.047	105.5	3.78	102.0	6.08	10.13	1.24	1471.
500	3.68	34.119	496	27.141	97.2	3.64	93.0	7.09	14.79	.91	1472.
600	3.52	34.194	595	27.217	90.7	3.47	85.8	8.03	20.05	.73	1474.
700	3.32	34.256	694	27.284	84.7	3.27	79.3	8.91	25.85	.74	1474.
800	3.15	34.309	793	27.343	79.6	3.09	73.7	9.73	32.13	.75	1475.
900	2.99	34.348	891	27.388	75.7	2.93	69.3	10.50	38.85	.66	1476.
1000	2.85	34.382	991	27.428	72.3	2.78	65.5	11.24	46.01	.58	1478.
1200	2.57	34.442	1189	27.500	66.0	2.49	58.6	12.62	61.48	.68	1480.
1500	2.31	34.503	1485	27.571	60.0	2.21	51.8	14.50	87.32	.77	1484.
2000	1.96	34.576	1975	27.657	52.8	1.83	43.4	17.32	137.61	1.37	1491.
2500	1.76	34.624	2466	27.711	48.6	1.59	38.1	19.84	195.35	1.98	1498.
3000	1.60	34.652	2956	27.745	46.0	1.38	34.6	22.20	261.36	2.53	1506.
3500	1.54	34.666	3445	27.762	45.3	1.27	32.7	24.47	336.59	3.03	1514.
4000	1.51	34.679	3934	27.774	45.4	1.19	31.2	26.73	423.15	3.22	1523.
4100	1.51	34.675	4031	27.770	45.9	1.18	31.5	27.18	441.86	3.25	1524.
4200	1.52	34.657	4128	27.755	47.5	1.17	32.8	27.65	461.72	3.26	1526.


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OXYGEN, ML/L
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SALINITY, O/OO
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TEMPERATURE, C
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DEPTH, METRES
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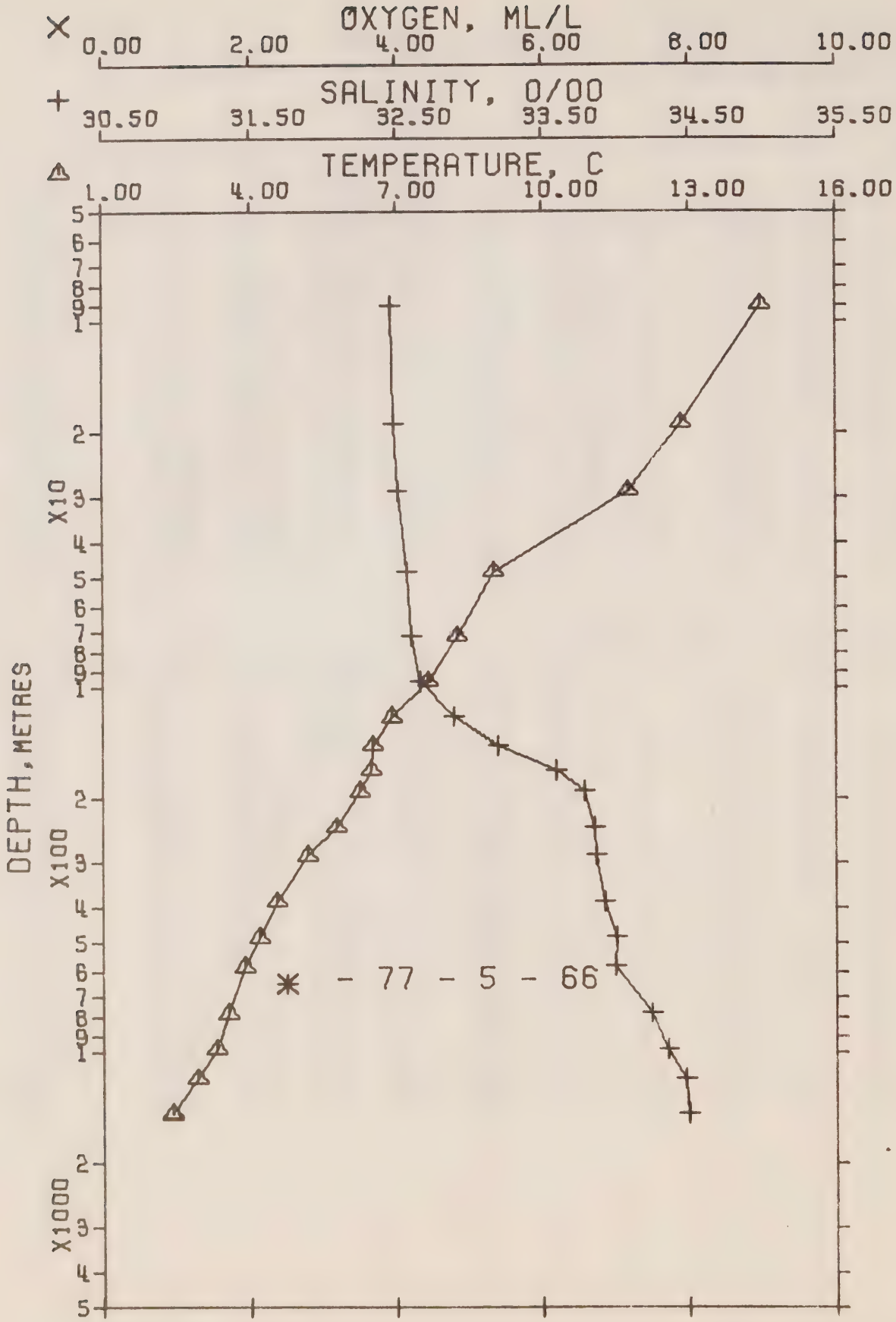
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 60 DATE 1/ 8/77 GMT 19.5
POSITION 49-34.0 N, 138-40.0 W STATION 10
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.74	32.507	0	24.726	322.7	11.74	322.7	.00	.00		1493.
10	11.56	32.510	10	24.762	319.6	11.56	319.3	.32	.02		1493.
20	11.51	32.508	20	24.769	319.1	11.51	318.6	.64	.07		1493.
30	11.27	32.525	30	24.826	313.9	11.27	313.2	.96	.15		1492.
50	9.38	32.592	50	25.198	278.7	9.37	277.7	1.56	.39		1486.
75	6.85	32.650	75	25.614	239.3	6.84	238.2	2.21	.81		1477.
101	5.95	32.671	100	25.745	227.0	5.94	225.7	2.79	1.33		1473.
126	5.55	32.927	125	25.994	203.4	5.54	202.0	3.33	1.95		1473.
150	5.41	33.491	149	26.456	159.9	5.40	158.2	3.77	2.57		1473.
175	5.29	33.749	174	26.674	139.6	5.28	137.5	4.14	3.19		1473.
201	5.08	33.810	200	26.746	132.9	5.06	130.6	4.50	3.86		1473.
253	4.67	33.846	251	26.821	126.1	4.65	123.5	5.16	5.40		1472.
306	4.45	33.883	304	26.874	121.5	4.43	118.4	5.82	7.28		1472.
407	4.13	33.984	404	26.988	111.4	4.10	107.5	7.00	11.55		1473.
504	3.92	34.072	500	27.079	103.4	3.88	98.8	8.04	16.38		1474.
603	3.73	34.170	598	27.176	94.8	3.69	89.6	9.02	21.91		1474.
807	3.33	34.294	800	27.314	82.8	3.27	76.4	10.83	34.87		1476.
1016	2.97	34.375	1006	27.412	74.2	2.90	67.1	12.46	50.01		1478.
1224	2.65	34.437	1212	27.489	67.3	2.57	59.6	13.93	66.83		1480.
1516	2.31	34.501	1499	27.569	60.3	2.21	51.9	15.78	92.65		1484.
1526	2.32	34.504*	1509	27.571	60.2	2.22	51.8	15.84	93.59		1484.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.74	32.507	0	24.726	322.7	11.74	322.7	.00	.00		1493.
10	11.56	32.510	10	24.762	319.6	11.56	319.3	.32	.02		1493.
20	11.51	32.508	20	24.769	319.1	11.51	318.6	.64	.07		1493.
30	11.27	32.525	30	24.826	313.9	11.27	313.2	.96	.15		1492.
50	9.38	32.592	50	25.198	278.7	9.37	277.7	1.56	.39		1486.
75	6.85	32.650	75	25.614	239.3	6.84	238.2	2.21	.81		1477.
100	5.97	32.671	99	25.742	227.2	5.96	226.0	2.78	1.31		1473.
125	5.56	32.920	124	25.988	204.1	5.55	202.6	3.31	1.93		1473.
150	5.41	33.491	149	26.456	159.9	5.40	158.2	3.77	2.57		1473.
175	5.29	33.749	174	26.674	139.6	5.28	137.5	4.14	3.19		1473.
200	5.09	33.807	199	26.743	133.2	5.07	130.9	4.48	3.83		1473.
225	4.88	33.828	224	26.783	129.6	4.86	127.1	4.81	4.54		1473.
250	4.69	33.844	249	26.817	126.5	4.67	123.8	5.13	5.31		1472.
300	4.47	33.879	298	26.868	122.0	4.45	118.9	5.75	7.05		1472.
400	4.15	33.978	398	26.981	112.0	4.12	108.2	6.92	11.23		1473.
500	3.93	34.069	496	27.076	103.7	3.89	99.1	8.00	16.16		1473.
600	3.74	34.167	595	27.174	95.0	3.69	89.8	8.99	21.74		1474.
700	3.53	34.233	694	27.247	88.6	3.48	82.8	9.91	27.81		1475.
800	3.34	34.290	794	27.310	83.1	3.29	76.8	10.77	34.37		1476.
900	3.16	34.332	892	27.360	78.7	3.10	72.0	11.57	41.37		1477.
1000	2.99	34.369	990	27.405	74.8	2.93	67.7	12.34	48.80		1478.
1200	2.68	34.430	1188	27.481	68.1	2.60	60.4	13.77	64.78		1480.
1500	2.33	34.498	1483	27.565	60.6	2.22	52.3	15.69	91.20		1484.


OXYGEN, ML/L
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SALINITY, O/OO
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TEMPERATURE, C
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13.00
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DEPTH, METRES
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X1000
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OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 66 DATE 2/ 8/77 GMT 22.5
POSITION 49- 2.0 N, 130-40.0 W STATION 6
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	14.90	32.474	0	24.071	385.1	14.90	385.1	.00	.00		1504.
9	14.46	32.475	9	24.166	376.4	14.46	376.1	.35	.02		1503.
19	12.85	32.486	19	24.500	344.7	12.85	344.2	.71	.07		1498.
29	11.76	32.522	29	24.734	322.6	11.76	321.9	1.04	.15		1494.
48	9.00	32.585	48	25.253	273.5	8.99	272.5	1.61	.37		1484.
72	8.26	32.613	72	25.387	261.0	8.25	259.8	2.26	.77		1482.
97	7.67	32.671	96	25.518	248.8	7.66	247.3	2.87	1.30		1480.
121	6.90	32.903	120	25.806	221.7	6.89	219.9	3.44	1.93		1478.
145	6.51	33.197	144	26.088	195.1	6.50	193.1	3.95	2.61		1477.
169	6.49	33.601	168	26.408	165.1	6.47	162.6	4.38	3.31		1478.
193	6.26	33.786	192	26.584	148.7	6.24	146.0	4.76	4.00		1478.
243	5.78	33.862	241	26.704	137.7	5.76	134.5	5.46	5.57		1477.
291	5.18	33.875	289	26.786	130.2	5.16	126.7	6.11	7.33		1475.
388	4.54	33.931	385	26.902	119.7	4.51	115.6	7.32	11.51		1474.
487	4.17	34.015	483	27.008	110.2	4.13	105.5	8.46	16.57		1474.
587	3.89	34.004	582	27.028	108.8	3.85	103.6	9.56	22.61		1475.
787	3.56	34.255	780	27.261	88.0	3.50	81.5	11.52	36.25		1477.
986	3.30	34.359	977	27.368	78.9	3.23	71.1	13.18	51.24		1479.
1188	2.93	34.476	1176	27.496	67.4	2.85	59.0	14.64	67.44		1481.
1479	2.41	34.505	1463	27.564	60.9	2.31	52.4	16.45	91.88		1484.
1489	2.41	34.500	1473	27.560	61.3	2.31	52.8	16.51	92.82		1484.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	14.90	32.474	0	24.071	385.1	14.90	385.1	.00	.00		1504.
10	14.25	32.476	10	24.211	372.1	14.25	371.8	.38	.02		1502.
20	12.73	32.490	20	24.526	342.3	12.73	341.7	.74	.07		1497.
30	11.60	32.526	30	24.766	319.6	11.60	318.9	1.07	.16		1493.
50	8.94	32.587	50	25.265	272.3	8.93	271.4	1.66	.40		1484.
75	8.19	32.620	75	25.403	259.5	8.18	258.2	2.32	.82		1482.
100	7.55	32.707	99	25.563	244.5	7.54	243.0	2.96	1.39		1480.
125	6.83	32.959	124	25.860	216.6	6.81	214.8	3.54	2.05		1478.
150	6.51	33.288	149	26.160	188.3	6.49	186.2	4.04	2.76		1477.
175	6.43	33.649	174	26.454	160.8	6.41	158.3	4.48	3.47		1478.
200	6.19	33.797	199	26.602	147.0	6.17	144.2	4.86	4.20		1477.
225	5.94	33.837	223	26.664	141.3	5.92	138.3	5.22	4.98		1477.
250	5.68	33.864	248	26.718	136.5	5.66	133.2	5.57	5.82		1476.
300	5.11	33.881	298	26.799	129.0	5.09	125.5	6.23	7.68		1475.
400	4.49	33.942	397	26.917	118.4	4.46	114.2	7.46	12.09		1474.
500	4.13	34.013	496	27.011	110.0	4.09	105.2	8.60	17.30		1474.
600	3.86	34.023	595	27.046	107.2	3.82	101.9	9.70	23.47		1475.
700	3.69	34.155	694	27.168	96.3	3.64	90.3	10.72	30.19		1476.
800	3.54	34.263	793	27.268	87.4	3.48	80.7	11.63	37.18		1477.
900	3.41	34.317	892	27.325	82.6	3.34	75.3	12.48	44.53		1478.
1000	3.27	34.368	992	27.378	78.0	3.20	70.2	13.28	52.33		1479.
1200	2.91	34.477	1189	27.499	67.1	2.82	58.7	14.72	68.44		1481.

Results of STD Observations

(P-77-5)

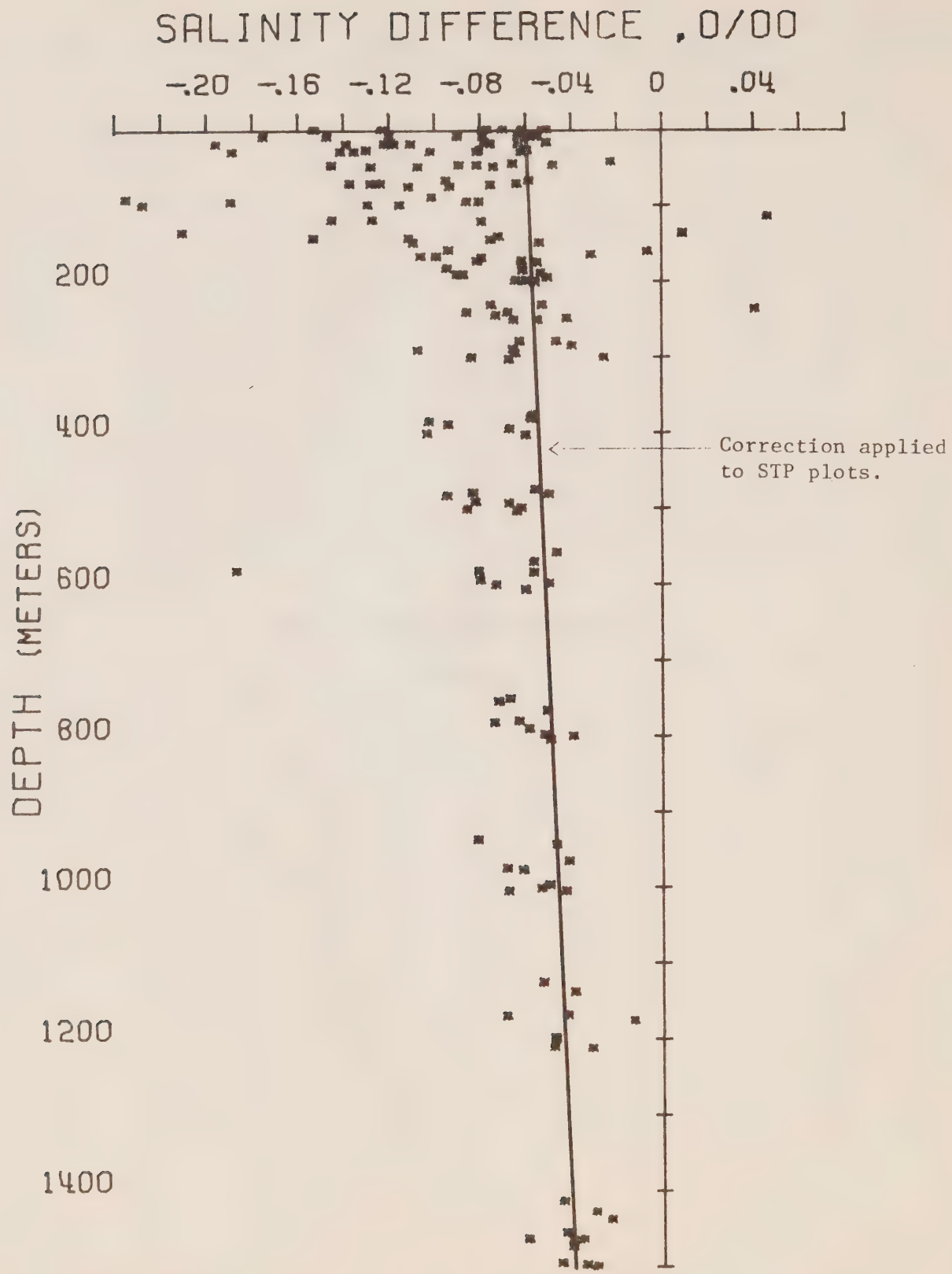


Figure 7. Salinity difference between hydro data and STP. P-77-5.

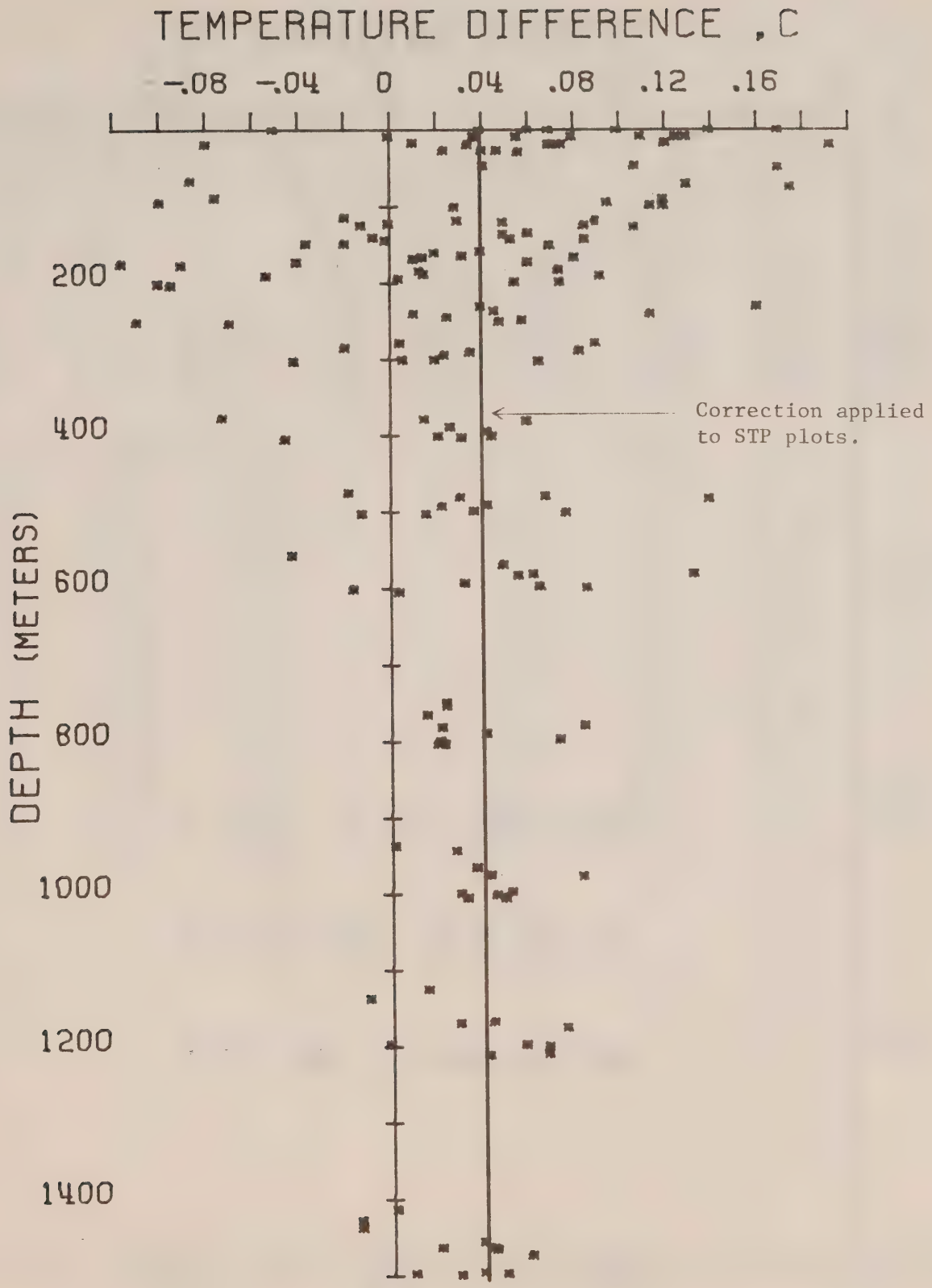
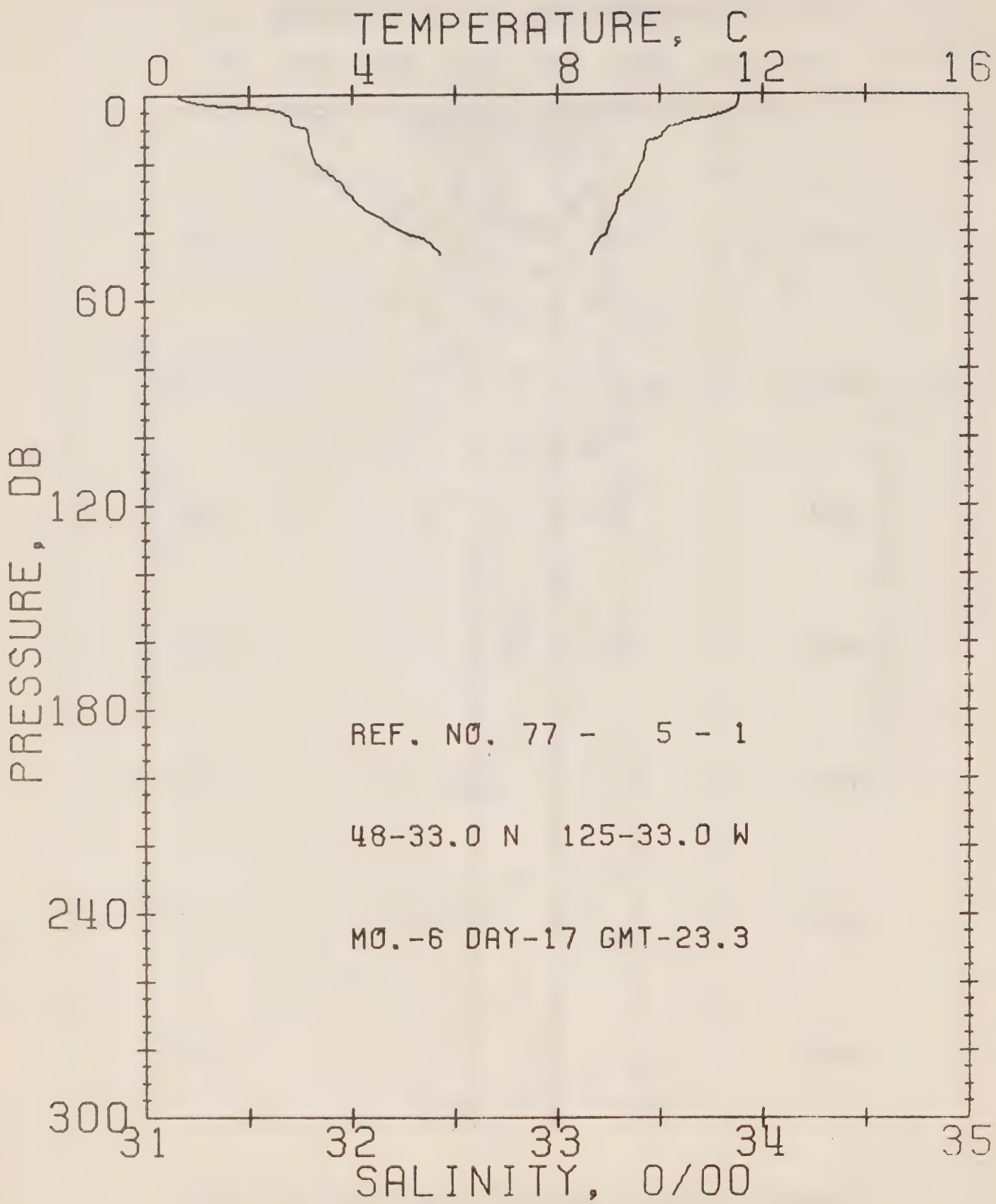


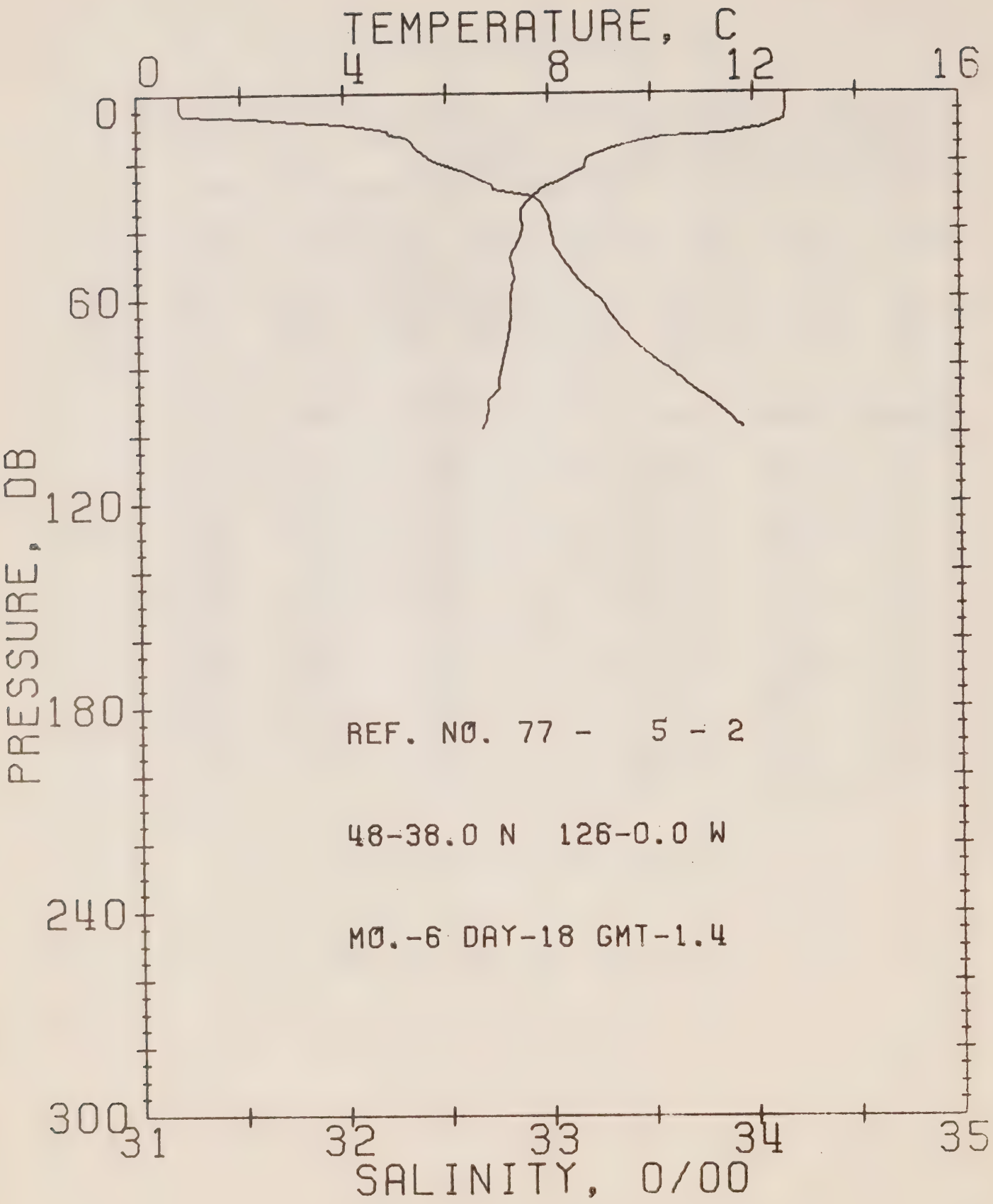
Figure 8. Temperature difference between hydro data and STP. P-77-5.


TEMPERATURE, C
0
4
8
12
16
0
60
120
180
240
300
PRESSURE, DB
REF. NØ. 77 - 5 - 1
48-33.0 N 125-33.0 W
MØ.-6 DAY-17 GMT-23.3
31
32
33
34
35
SALINITY, O/OO

OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 1 DATE 17/ 6/77 STATION 1
POSITION 48-33.0N, 125-33.0W GMT 23.3
RESULTS OF STP CAST 29 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.54	31.16	0	23.72	418.7	0.0	0.0	1491.
10	10.16	31.78	10	24.44	350.5	0.39	0.02	1487.
20	9.67	31.82	20	24.55	340.0	0.73	0.07	1485.
30	9.23	32.00	30	24.76	320.2	1.06	0.16	1484.

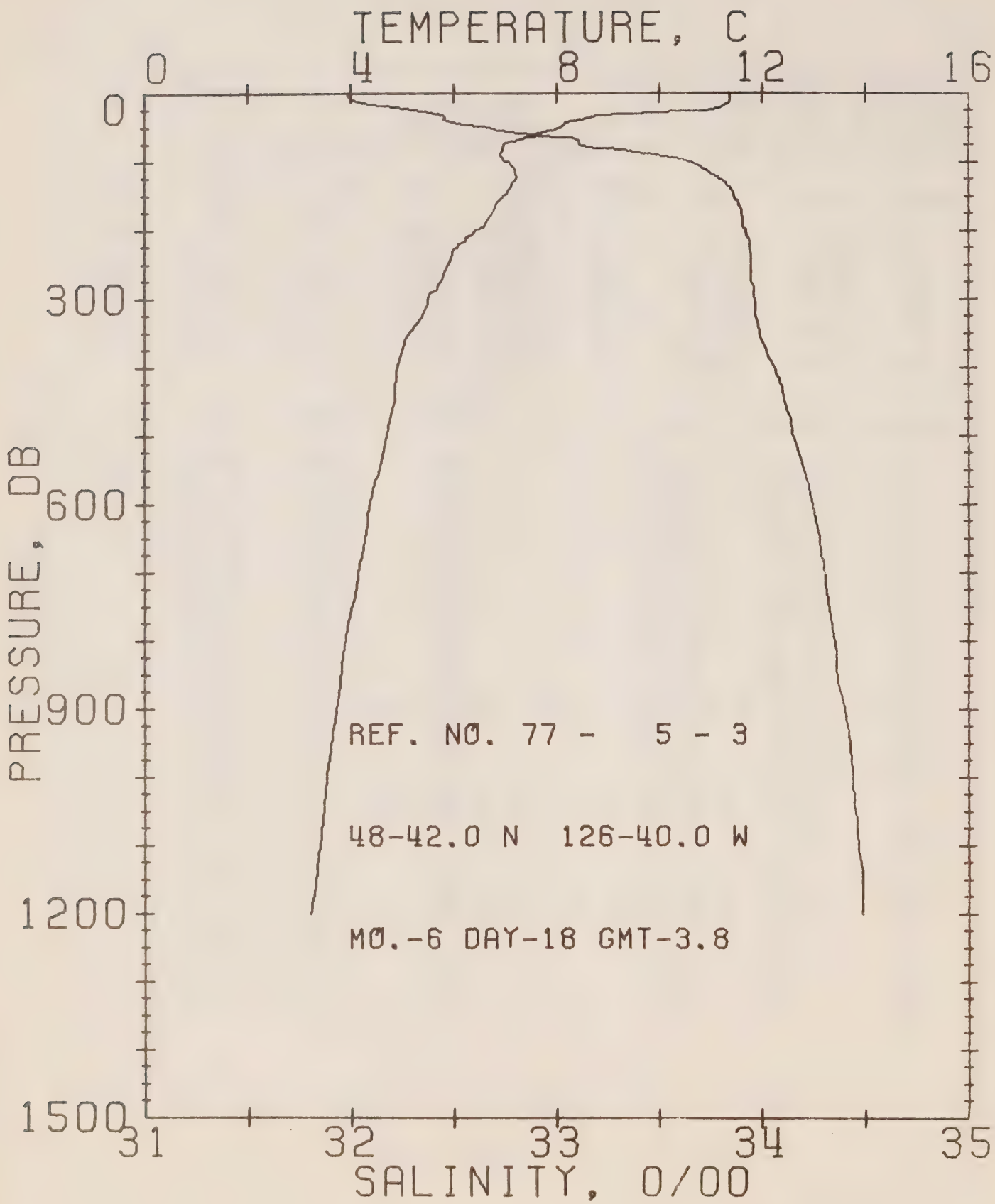
DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	11.54	31.16	23.	9.60	31.88
1.	11.54	31.16	26.	9.49	31.95
2.	11.54	31.23	28.	9.42	31.97
3.	11.54	31.30	30.	9.23	32.00
4.	11.49	31.58	31.	9.21	32.01
5.	11.36	31.67	34.	9.17	32.07
7.	11.02	31.70	36.	9.10	32.14
8.	10.54	31.70	38.	9.02	32.18
9.	10.42	31.71	41.	8.98	32.27
10.	10.16	31.78	42.	8.85	32.35
13.	10.02	31.79	44.	8.76	32.39
14.	9.75	31.79	45.	8.73	32.41
18.	9.71	31.81	46.	8.70	32.42
20.	9.67	31.82	47.	8.67	32.43
21.	9.64	31.84			


TEMPERATURE, C
0
4
8
12
16
0
60
120
180
240
300
PRESSURE, DB
REF. NØ. 77 - 5 - 2
48-38.0 N 126-0.0 W
MØ.-6 DAY-18 GMT-1.4
31
32
33
34
35
SALINITY, 0/00

OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 2 DATE 18/ 6/77 STATION 2
POSITION 48-38.0N, 126- 0.0W GMT 1.4
RESULTS OF STP CAST 50 POINTS TAKEN FROM ANALOG TRACE

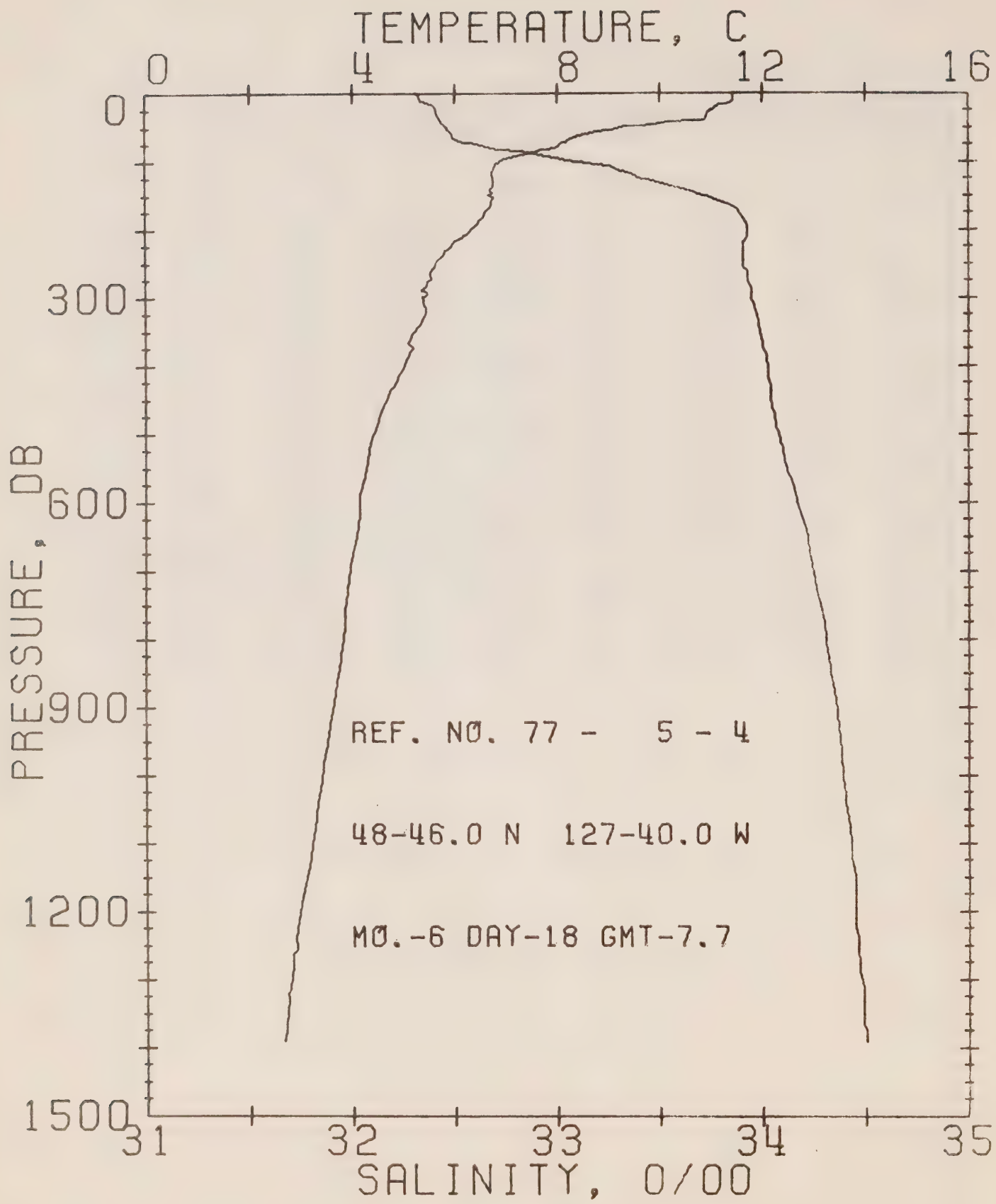
PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.63	31.20	0	23.55	435.0	0.0	0.0	1495.
10	12.26	32.13	10	24.34	360.2	0.42	0.02	1495.
20	8.75	32.44	20	25.18	280.3	0.73	0.07	1483.
30	7.70	32.93	30	25.72	229.2	0.98	0.13	1480.
50	7.28	33.08	50	25.90	212.4	1.42	0.31	1478.
75	7.16	33.45	75	26.20	183.9	1.92	0.63	1479.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	12.63	31.20	32.	7.56	32.96
2.	12.63	31.20	34.	7.47	32.98
3.	12.63	31.20	36.	7.47	33.00
4.	12.63	31.20	40.	7.48	33.01
5.	12.63	31.21	43.	7.45	33.02
6.	12.63	31.22	44.	7.40	33.02
7.	12.62	31.55	45.	7.35	33.03
8.	12.62	31.76	47.	7.27	33.05
9.	12.39	31.99	49.	7.26	33.07
10.	12.26	32.13	52.	7.32	33.11
11.	11.90	32.21	55.	7.34	33.14
12.	11.44	32.22	56.	7.27	33.16
13.	10.27	32.30	61.	7.26	33.25
14.	9.85	32.32	65.	7.25	33.30
16.	9.28	32.35	69.	7.22	33.35
19.	8.77	32.41	74.	7.18	33.43
20.	8.75	32.44	79.	7.10	33.53
22.	8.72	32.54	81.	7.08	33.58
23.	8.57	32.59	84.	7.02	33.65
24.	8.44	32.63	87.	7.00	33.70
25.	8.27	32.66	89.	6.88	33.75
26.	8.20	32.70	90.	6.81	33.78
27.	7.97	32.72	93.	6.80	33.84
28.	7.88	32.73	96.	6.77	33.90
30.	7.70	32.93	98.	6.70	33.94


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 3
48-42.0 N 126-40.0 W
MO.-6 DAY-18 GMT-3.8
31
32
33
34
35
SALINITY, O/OO

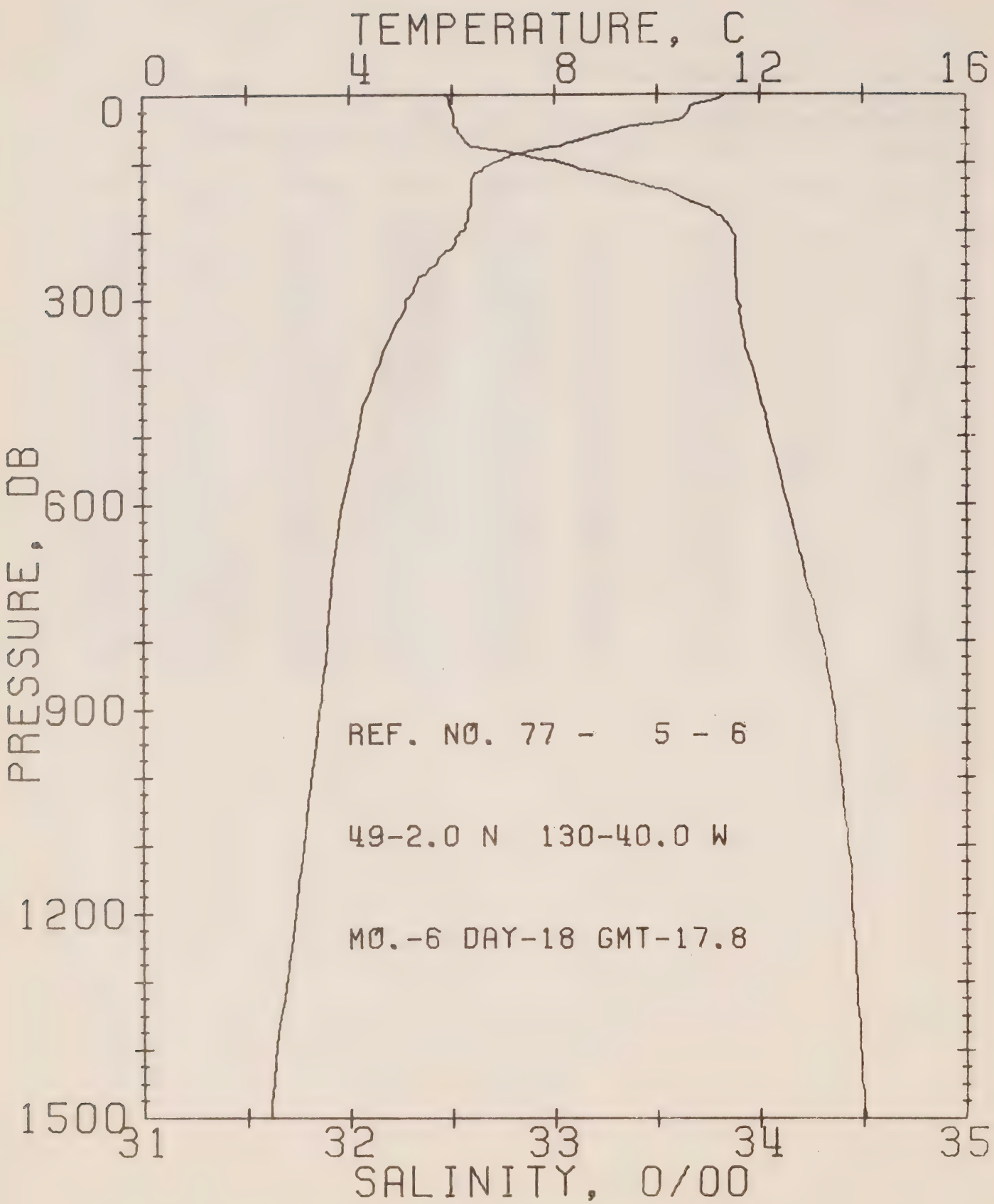
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 3 DATE 18/ 6/77 STATION 3
POSITION 48-42.0N, 126-40.0W GMT 3.8
RESULTS OF STP CAST 159 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.36	31.99	0	24.40	354.3	0.0	0.0	1491.
10	11.38	32.01	10	24.40	353.8	0.35	0.02	1492.
20	11.23	32.19	20	24.58	337.6	0.70	0.07	1492.
30	9.48	32.42	30	25.05	292.8	1.02	0.15	1486.
50	8.07	32.65	50	25.45	255.1	1.57	0.37	1481.
75	6.95	33.11	75	25.97	206.1	2.13	0.73	1478.
100	7.02	33.64	99	26.37	168.1	2.60	1.14	1479.
125	7.19	33.79	124	26.47	159.5	3.01	1.61	1480.
150	6.96	33.86	149	26.55	151.8	3.39	2.16	1480.
175	6.74	33.90	174	26.61	146.3	3.77	2.77	1479.
200	6.46	33.92	199	26.67	141.4	4.13	3.46	1479.
225	6.05	33.94	223	26.73	135.2	4.47	4.21	1478.
250	5.88	33.95	248	26.76	132.6	4.81	5.02	1477.
300	5.49	33.98	298	26.82	127.6	5.46	6.84	1477.
400	4.90	34.06	397	26.97	114.3	6.63	11.18	1476.
500	4.68	34.15	496	27.06	106.0	7.78	16.22	1477.
600	4.37	34.24	595	27.17	96.6	8.79	21.87	1477.
800	3.89	34.35	793	27.31	84.7	10.60	34.75	1479.
1000	3.52	34.44	990	27.41	75.6	12.20	49.42	1480.
1200	3.21	34.49	1188	27.48	69.7	13.65	65.65	1483.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 4
48-46.0 N 127-40.0 W
MØ.-6 DAY-18 GMT-7.7
31
32
33
34
35
SALINITY, 0/00

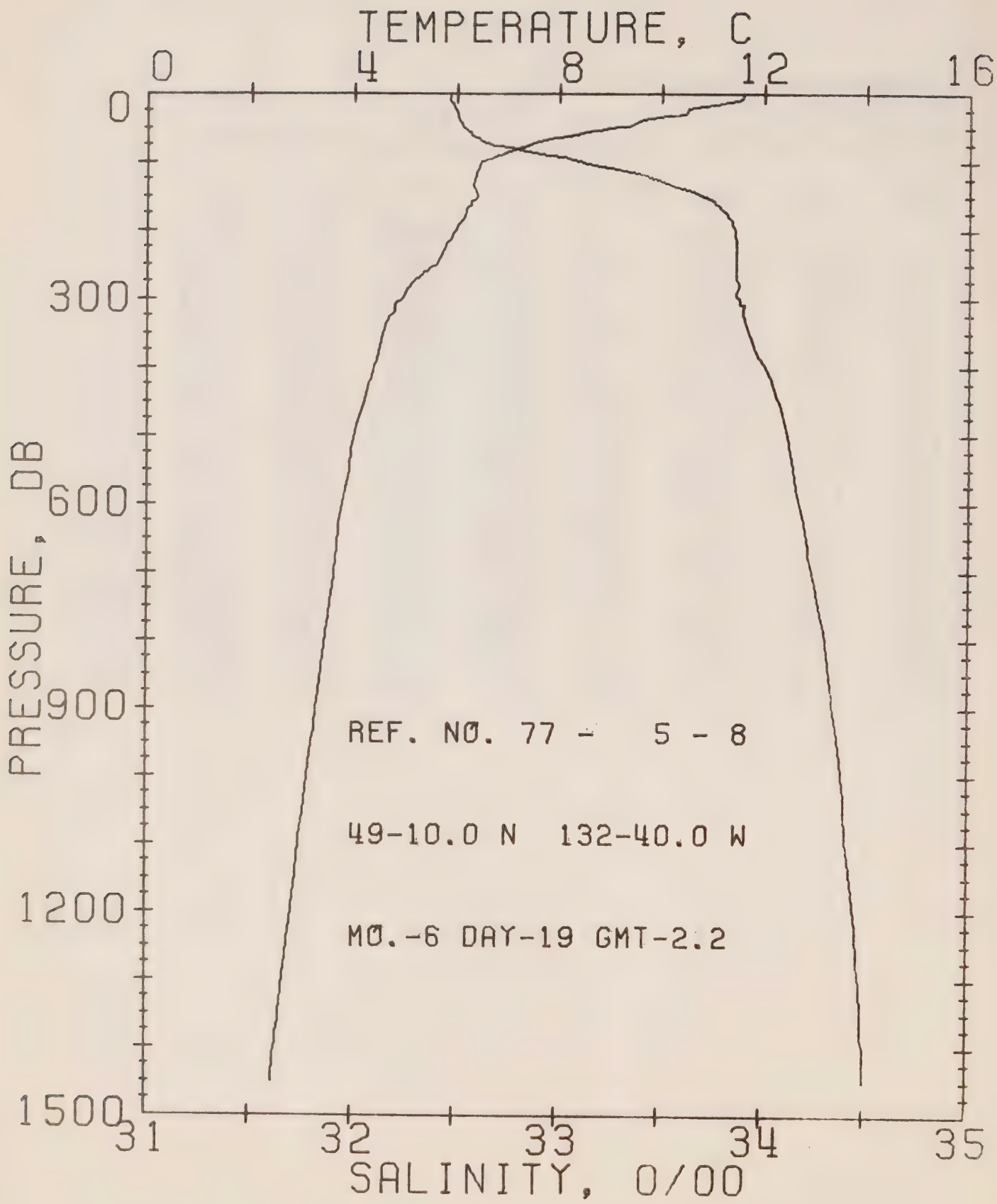
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 4 DATE 18/ 6/77 STATION 4
POSITION 48-46.0N. 127-40.0W GMT 7.7
RESULTS OF STP CAST 192 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.43	32.31	0	24.63	331.8	0.0	0.0	1492.
10	11.43	32.33	10	24.64	331.0	0.33	0.02	1492.
20	11.12	32.40	20	24.76	320.6	0.66	0.07	1491.
30	10.92	32.41	30	24.80	316.8	0.98	0.15	1491.
50	9.27	32.45	50	25.11	287.3	1.59	0.40	1485.
75	8.05	32.60	75	25.41	259.3	2.28	0.83	1481.
100	6.87	33.07	99	25.95	208.4	2.86	1.35	1478.
125	6.76	33.40	124	26.22	182.7	3.34	1.90	1478.
150	6.67	33.71	149	26.47	159.2	3.76	2.49	1478.
175	6.58	33.89	174	26.63	144.9	4.14	3.12	1479.
200	6.32	33.93	199	26.69	139.0	4.50	3.80	1478.
225	5.90	33.91	223	26.73	135.6	4.84	4.54	1477.
250	5.63	33.91	248	26.76	132.5	5.17	5.35	1476.
300	5.40	33.95	298	26.82	127.3	5.82	7.16	1476.
400	5.00	34.03	397	26.93	118.1	7.05	11.55	1476.
500	4.41	34.08	496	27.04	108.3	8.19	16.74	1476.
600	4.13	34.17	595	27.14	99.3	9.22	22.55	1476.
800	3.81	34.31	793	27.28	87.0	11.08	35.72	1478.
1000	3.39	34.39	991	27.39	77.9	12.72	50.76	1480.
1200	2.95	34.45	1188	27.48	69.7	14.19	67.24	1481.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 6
49-2.0 N 130-40.0 W
MO.-6 DAY-18 GMT-17.8
31
32
33
34
35
SALINITY, O/OO

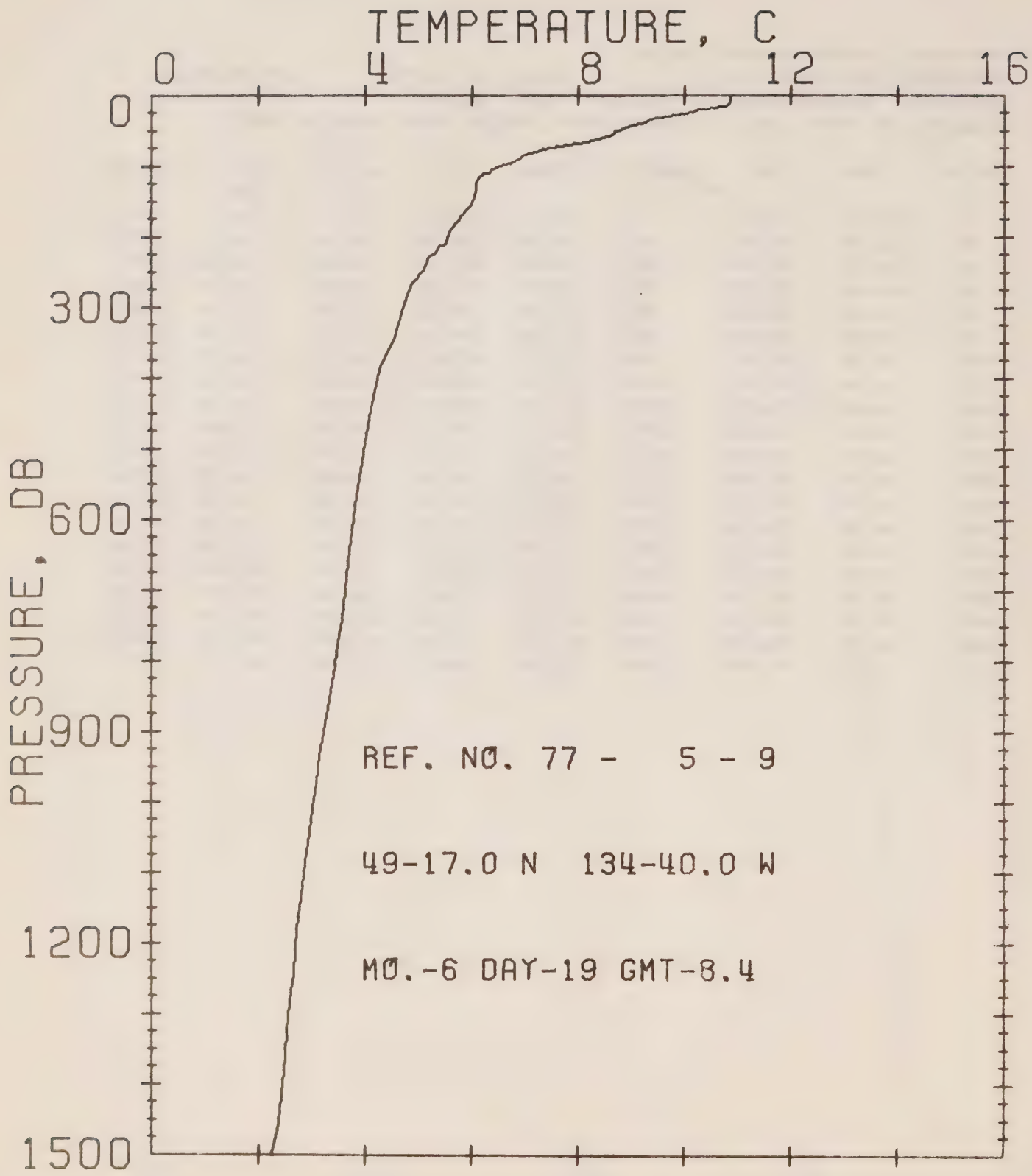
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 6 DATE 18/ 6/77 STATION 6
POSITION 49- 2.0N, 130-40.0W GMT 17.8
RESULTS OF STP CAST 184 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.31	32.47	0	24.78	318.0	0.0	0.0	1492.
10	11.08	32.49	10	24.83	313.2	0.32	0.02	1491.
20	10.64	32.49	20	24.91	305.6	0.62	0.06	1490.
30	10.56	32.51	30	24.94	303.5	0.93	0.14	1490.
50	9.30	32.52	50	25.16	283.0	1.52	0.38	1485.
75	8.11	32.59	75	25.39	260.8	2.20	0.81	1481.
100	6.79	33.03	99	25.92	210.6	2.78	1.33	1477.
125	6.36	33.34	124	26.22	182.5	3.28	1.89	1476.
150	6.37	33.61	149	26.43	162.7	3.71	2.49	1477.
175	6.32	33.78	174	26.58	149.4	4.09	3.14	1478.
200	6.21	33.86	199	26.65	142.4	4.46	3.83	1478.
225	6.00	33.88	223	26.69	138.9	4.81	4.59	1477.
250	5.65	33.88	248	26.74	135.0	5.15	5.42	1476.
300	5.10	33.89	298	26.81	128.3	5.81	7.26	1475.
400	4.54	33.96	397	26.93	117.6	7.04	11.65	1474.
500	4.14	34.04	496	27.04	107.8	8.16	16.79	1474.
600	3.85	34.13	595	27.14	99.1	9.20	22.58	1475.
800	3.54	34.30	793	27.30	84.6	11.03	35.59	1477.
1000	3.24	34.39	991	27.40	75.9	12.63	50.24	1479.
1200	2.93	34.45	1188	27.47	69.8	14.08	66.51	1481.
1500	2.45	34.51	1484	27.57	61.2	16.04	93.45	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 8
49-10.0 N 132-40.0 W
MO.-6 DAY-19 GMT-2.2
31
32
33
34
35
SALINITY, O/OO

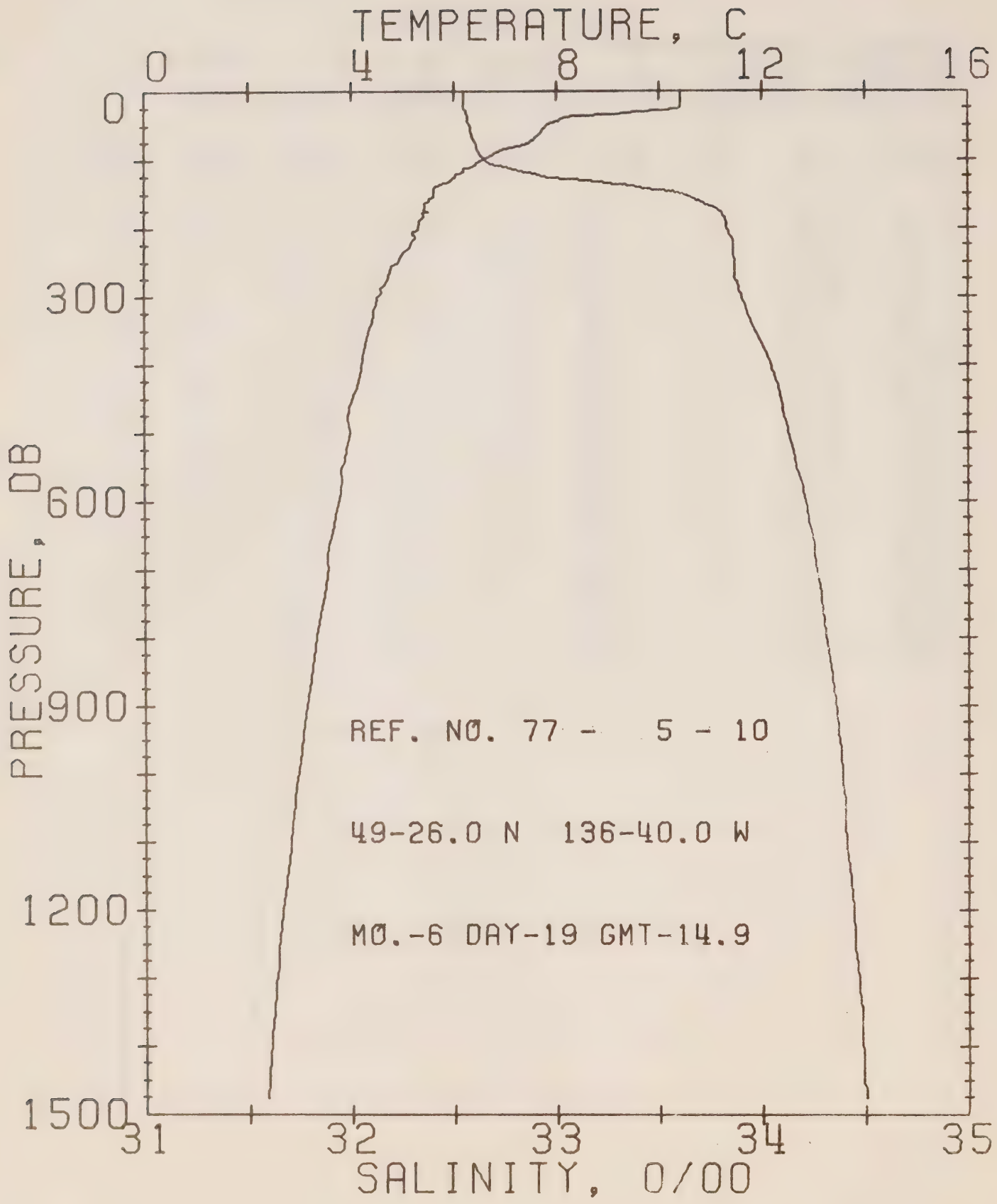
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 8 DATE 19/ 6/77 STATION 7
POSITION 49-10.0N, 132-40.0W GMT 2.2
RESULTS OF STP CAST 169 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.61	32.47	0	24.72	323.2	0.0	0.0	1493.
10	11.48	32.47	10	24.75	321.4	0.32	0.02	1493.
20	10.72	32.48	20	24.89	307.8	0.64	0.06	1490.
30	10.46	32.50	30	24.95	302.4	0.94	0.14	1489.
50	9.07	32.53	50	25.20	278.5	1.52	0.38	1485.
75	7.40	32.68	75	25.56	244.4	2.17	0.79	1479.
100	6.46	33.11	99	26.03	200.5	2.73	1.28	1476.
125	6.34	33.47	124	26.33	172.5	3.19	1.81	1476.
150	6.41	33.70	149	26.50	156.3	3.60	2.39	1477.
175	6.17	33.82	174	26.62	145.2	3.97	3.01	1477.
200	5.98	33.86	199	26.68	140.0	4.33	3.69	1477.
225	5.75	33.87	223	26.72	136.6	4.68	4.43	1476.
250	5.59	33.87	248	26.74	135.0	5.02	5.26	1476.
300	4.94	33.88	298	26.82	127.2	5.67	7.09	1474.
400	4.40	34.00	397	26.98	112.8	6.87	11.35	1474.
500	4.01	34.12	496	27.11	100.7	7.93	16.21	1474.
600	3.79	34.18	595	27.18	94.9	8.91	21.69	1475.
800	3.45	34.31	793	27.31	83.1	10.69	34.37	1477.
1000	3.11	34.39	990	27.41	74.6	12.27	48.85	1479.
1200	2.81	34.45	1188	27.49	68.0	13.70	64.89	1481.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 9
49-17.0 N 134-40.0 W
MØ.-6 DAY-19 GMT-8.4

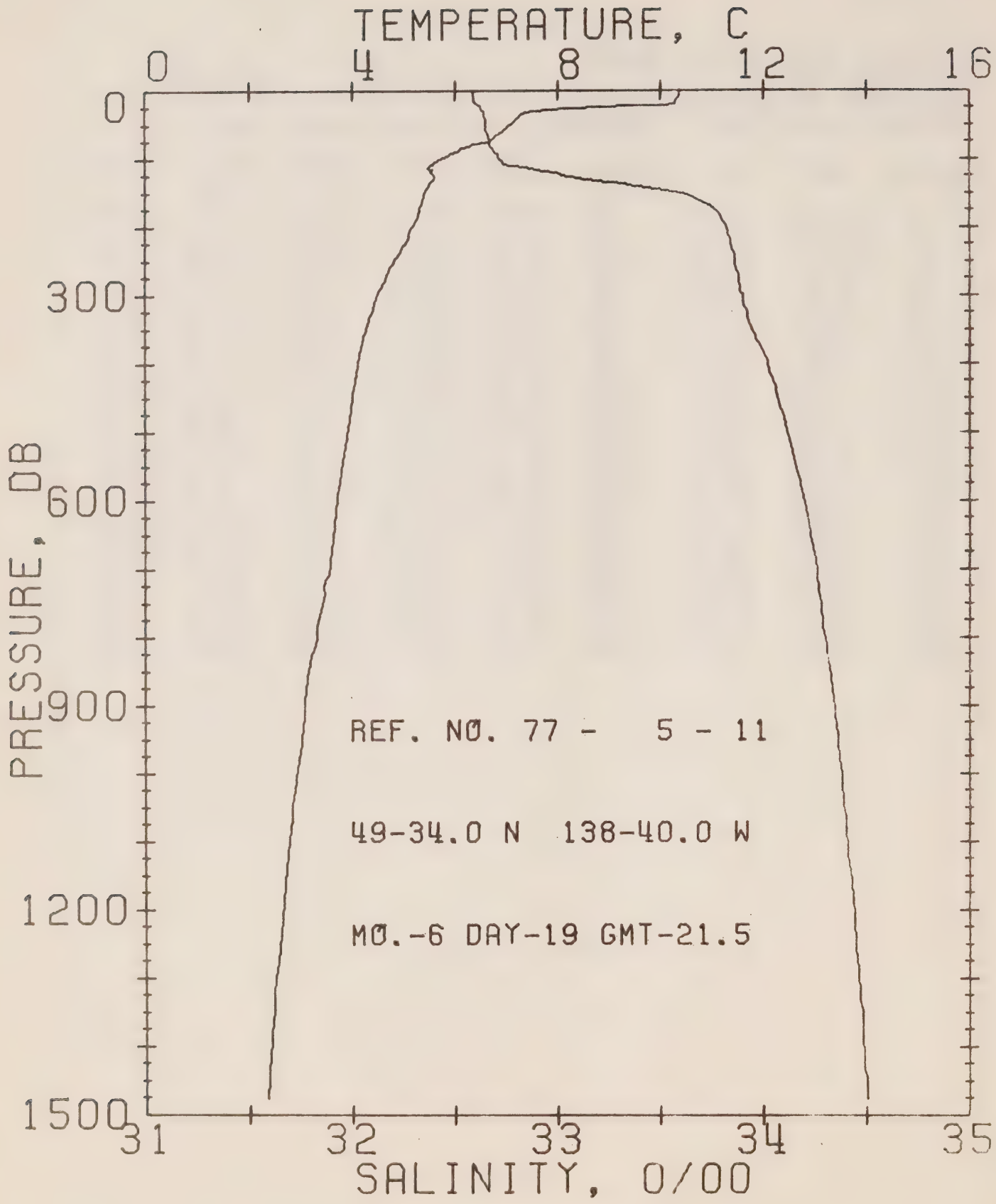
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 9 DATE 19/ 6/77 STATION 8
POSITION 49-17.0N. 134-40.0W GMT 8.4
RESULTS OF STP CAST 96 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.89		0					
10	10.87		10					
20	10.41		20					
30	9.73		31					
50	8.80		51					
75	7.50		76					
100	6.57		102					
125	6.08		127					
150	6.02		153					
175	5.76		178					
200	5.56		204					
225	5.27		229					
250	5.08		255					
300	4.72		306					
400	4.25		407					
500	3.99		509					
600	3.79		611					
800	3.45		814					
1000	3.04		1017					
1200	2.71		1220					
1500	2.25		1523					


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 10
49-26.0 N 136-40.0 W
MØ.-6 DAY-19 GMT-14.9
31
32
33
34
35
SALINITY, O/OO

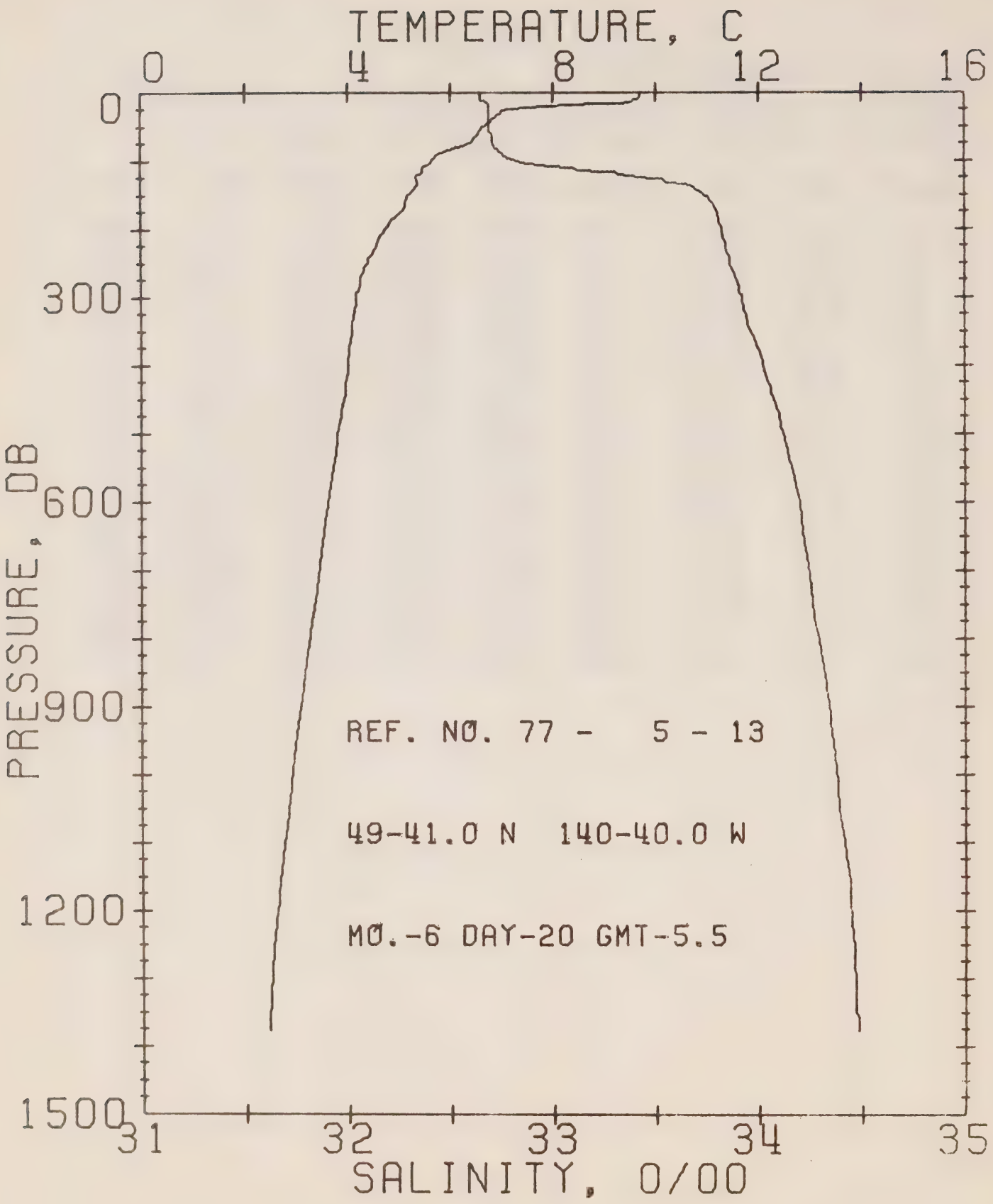
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 10 DATE 19/ 6/77 STATION 9
POSITION 49-26.0N, 136-40.0W GMT 14.9
RESULTS OF STP CAST 172 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.42	32.55	0	24.99	297.2	0.0	0.0	1489.
10	10.42	32.55	10	24.99	297.7	0.30	0.02	1489.
20	10.42	32.55	20	24.99	297.9	0.60	0.06	1489.
30	9.81	32.56	30	25.10	287.6	0.89	0.14	1487.
50	7.82	32.57	50	25.42	257.6	1.42	0.35	1480.
75	7.43	32.60	75	25.50	250.8	2.06	0.76	1479.
100	6.55	32.65	99	25.65	236.0	2.67	1.30	1476.
125	6.00	32.95	124	25.96	207.3	3.23	1.94	1474.
150	5.60	33.61	149	26.53	153.4	3.67	2.55	1474.
175	5.45	33.79	174	26.69	138.1	4.03	3.16	1474.
200	5.31	33.83	199	26.74	134.1	4.37	3.80	1474.
225	5.14	33.86	223	26.78	130.3	4.70	4.52	1474.
250	4.89	33.87	248	26.81	127.1	5.02	5.30	1473.
300	4.52	33.90	298	26.88	121.0	5.64	7.03	1472.
400	4.19	34.04	397	27.03	107.6	6.79	11.10	1473.
500	3.97	34.13	496	27.12	99.7	7.82	15.82	1474.
600	3.74	34.21	595	27.21	92.0	8.77	21.17	1475.
800	3.31	34.31	793	27.33	81.3	10.50	33.43	1476.
1000	2.94	34.39	990	27.43	73.0	12.03	47.48	1478.
1200	2.65	34.44	1188	27.49	67.1	13.43	63.20	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 11
49-34.0 N 138-40.0 W
MØ.-6 DAY-19 GMT-21.5
31
32
33
34
35
SALINITY, 0/00

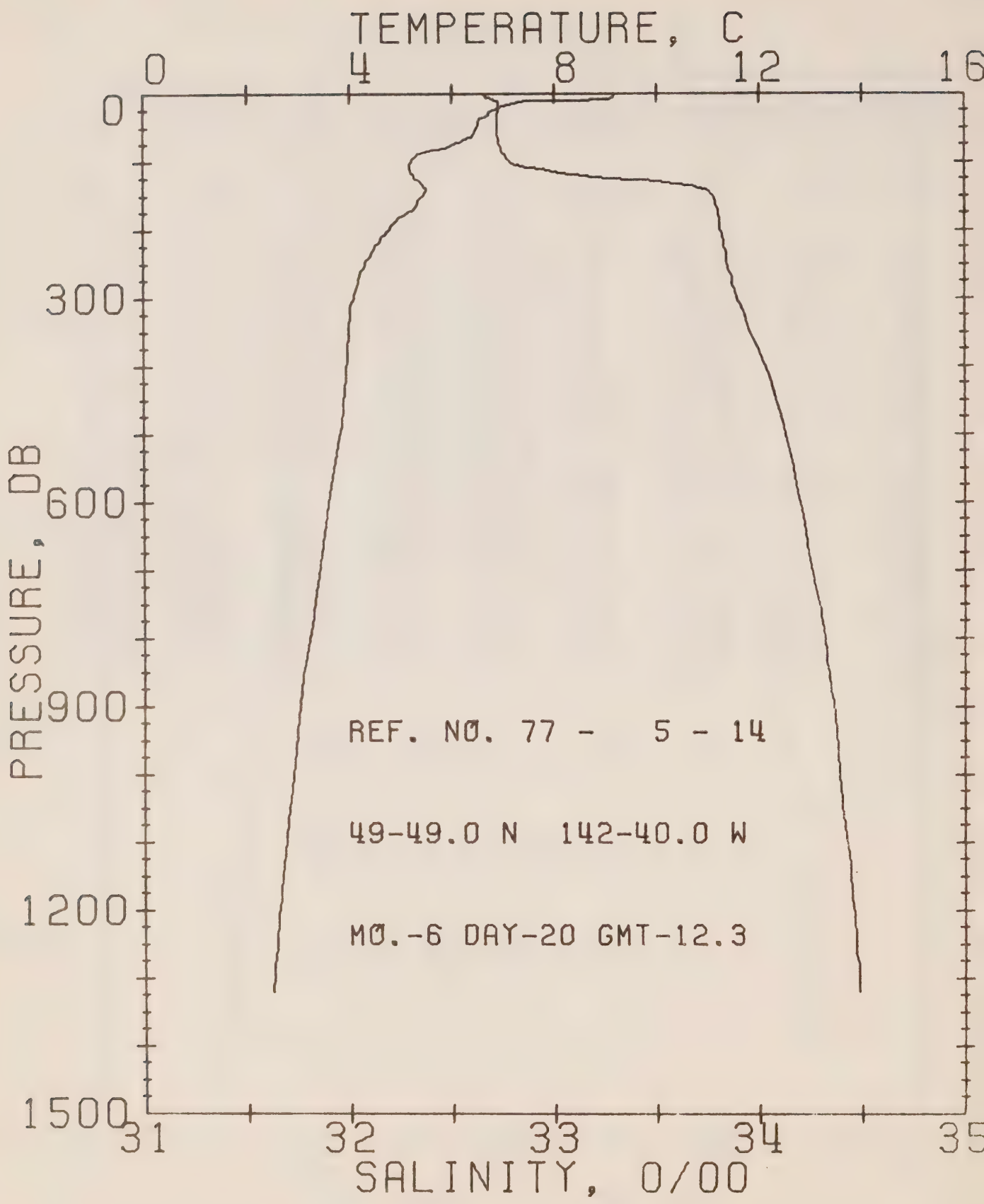
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 11 DATE 19/ 6/77 STATION 10
POSITION 49-34.0N, 138-40.0W GMT 21.5
RESULTS OF STP CAST 183 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.37	32.59	0	25.03	293.5	0.0	0.0	1489.
10	10.34	32.59	10	25.04	293.4	0.29	0.01	1489.
20	10.30	32.61	20	25.06	291.5	0.59	0.06	1489.
30	7.54	32.64	30	25.51	248.6	0.85	0.13	1479.
50	7.06	32.65	50	25.59	241.8	1.34	0.33	1477.
75	6.64	32.67	75	25.66	235.4	1.94	0.71	1476.
100	5.69	32.71	99	25.81	221.2	2.51	1.21	1472.
125	5.59	33.03	124	26.08	196.0	3.03	1.81	1473.
150	5.40	33.58	149	26.53	153.3	3.47	2.42	1473.
175	5.29	33.76	174	26.68	139.0	3.83	3.02	1473.
200	5.16	33.82	199	26.75	133.3	4.17	3.67	1473.
225	5.01	33.84	223	26.78	130.2	4.50	4.38	1473.
250	4.81	33.86	248	26.82	126.8	4.82	5.16	1473.
300	4.49	33.90	298	26.89	120.6	5.44	6.89	1472.
400	4.10	34.02	397	27.02	108.5	6.59	10.99	1473.
500	3.91	34.12	496	27.12	100.0	7.63	15.75	1473.
600	3.71	34.20	595	27.20	92.5	8.59	21.14	1474.
800	3.30	34.30	793	27.32	82.2	10.34	33.55	1476.
1000	2.92	34.38	990	27.42	73.5	11.88	47.70	1478.
1200	2.65	34.44	1188	27.49	67.2	13.29	63.43	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 13
49-41.0 N 140-40.0 W
MO.-6 DAY-20 GMT-5.5
31
32
33
34
35
SALINITY, O/OO

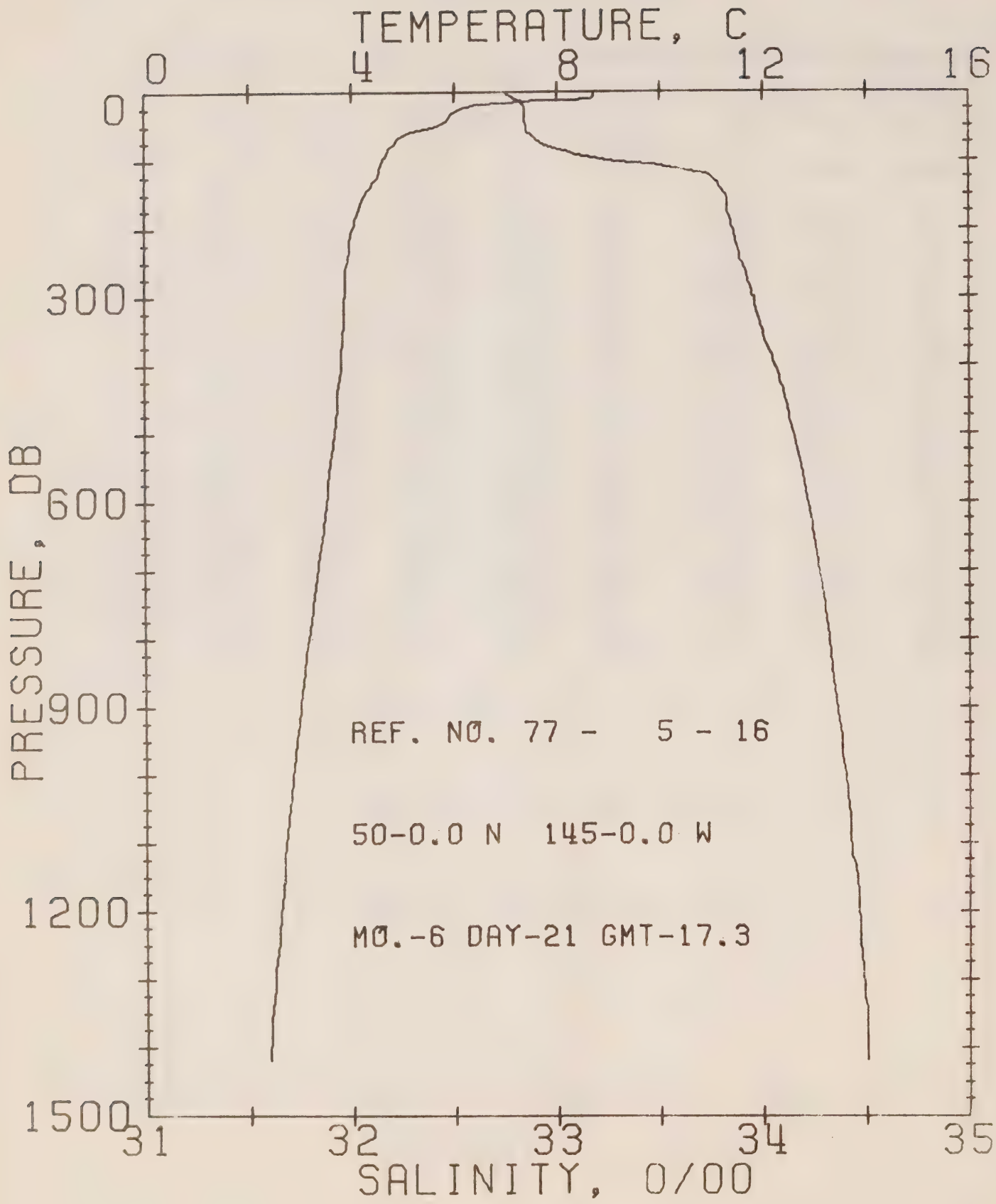
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77-5-13 DATE 20/ 6/77 STATION 11
POSITION 49-41.0N, 140-40.0W GMT 5.5
RESULTS OF STP CAST 176 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.71	32.64	0	25.18	279.3	0.0	0.0	1486.
10	9.65	32.65	10	25.20	278.0	0.28	0.01	1486.
20	7.85	32.69	20	25.51	249.0	0.55	0.06	1480.
30	6.96	32.69	30	25.63	237.3	0.79	0.12	1476.
50	6.65	32.69	50	25.67	233.7	1.26	0.31	1475.
75	6.33	32.70	75	25.72	229.3	1.84	0.68	1475.
100	5.62	32.82	99	25.90	212.2	2.39	1.17	1472.
125	5.33	33.48	124	26.46	159.7	2.86	1.71	1472.
150	5.18	33.74	149	26.68	139.0	3.23	2.22	1473.
175	5.03	33.80	174	26.74	133.0	3.57	2.79	1472.
200	4.73	33.82	199	26.80	128.3	3.90	3.41	1472.
225	4.54	33.84	223	26.83	125.0	4.21	4.10	1471.
250	4.37	33.86	248	26.87	121.9	4.52	4.84	1471.
300	4.15	33.92	298	26.94	115.5	5.12	6.50	1471.
400	4.00	34.02	397	27.03	107.3	6.23	10.48	1472.
500	3.80	34.12	496	27.13	98.6	7.26	15.19	1473.
600	3.60	34.20	595	27.21	91.4	8.21	20.50	1474.
800	3.24	34.29	793	27.32	81.9	9.95	32.88	1476.
1000	2.90	34.38	990	27.42	73.3	11.49	47.02	1478.
1200	2.61	34.44	1188	27.50	66.2	12.89	62.62	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 14
49-49.0 N 142-40.0 W
MØ.-6 DAY-20 GMT-12.3
31
32
33
34
35
SALINITY, 0/00

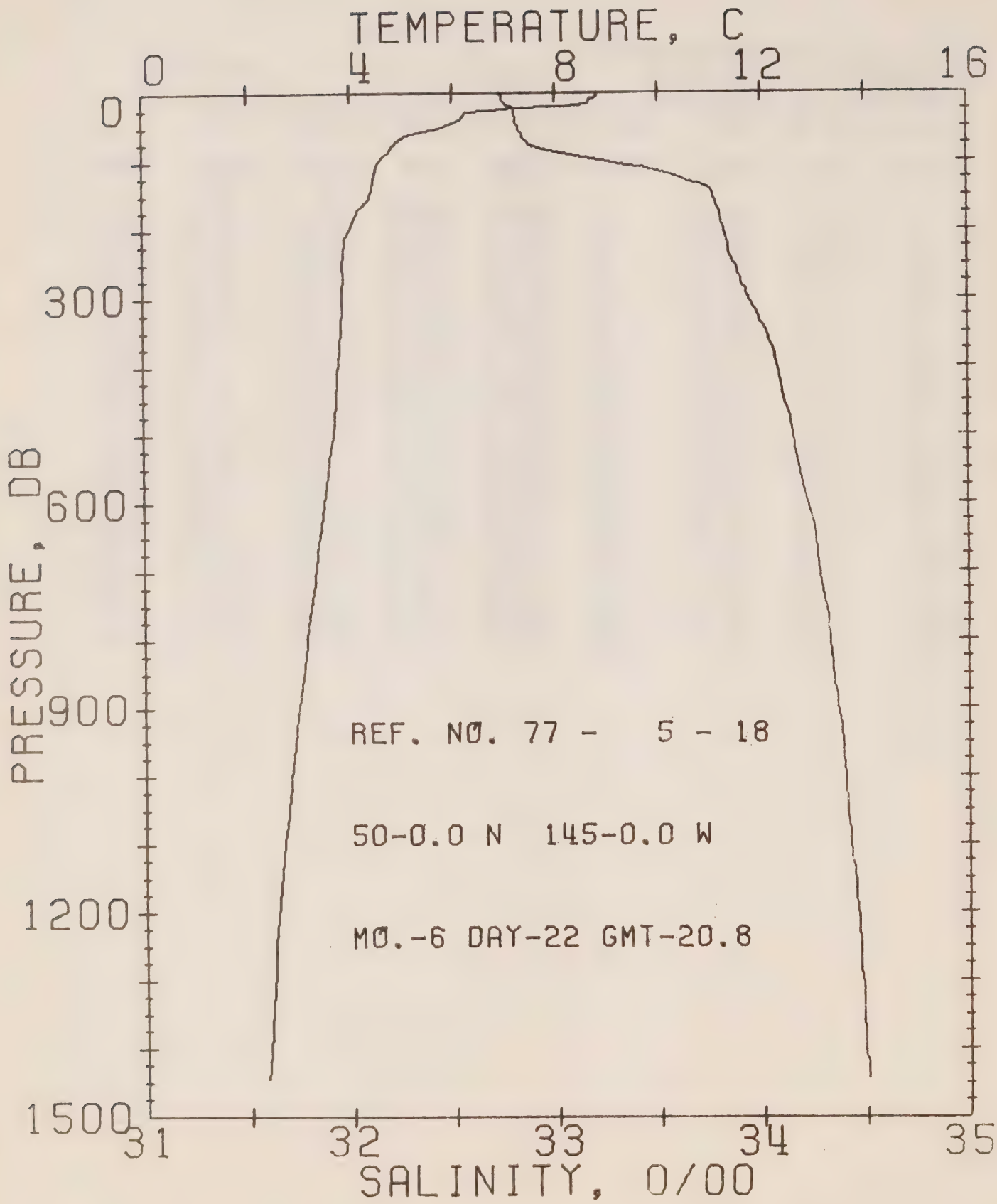
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 14 DATE 20/ 6/77 STATION 12
POSITION 49-49.0N, 142-40.0W GMT 12.3
RESULTS OF STP CAST 149 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.18	32.66	0	25.28	269.7	0.0	0.0	1484.
10	8.33	32.71	10	25.45	254.0	0.27	0.01	1481.
20	6.96	32.73	20	25.66	234.2	0.51	0.05	1476.
30	6.70	32.72	30	25.69	231.5	0.74	0.11	1475.
50	6.46	32.72	50	25.72	229.1	1.20	0.30	1475.
75	6.03	32.73	75	25.78	223.4	1.77	0.66	1473.
100	5.20	32.78	99	25.92	210.6	2.31	1.14	1471.
125	5.31	33.39	124	26.39	166.2	2.80	1.70	1472.
150	5.42	33.77	149	26.68	139.0	3.17	2.21	1474.
175	5.14	33.80	174	26.73	134.2	3.51	2.78	1473.
200	4.76	33.81	199	26.78	129.4	3.83	3.41	1472.
225	4.50	33.83	223	26.83	125.3	4.15	4.09	1471.
250	4.29	33.84	248	26.86	122.4	4.46	4.84	1471.
300	4.07	33.89	298	26.92	116.9	5.06	6.51	1471.
400	3.93	34.03	397	27.05	105.9	6.17	10.47	1472.
500	3.80	34.13	496	27.14	97.9	7.19	15.12	1473.
600	3.58	34.20	595	27.22	91.2	8.13	20.41	1474.
800	3.20	34.32	793	27.35	79.5	9.84	32.56	1476.
1000	2.88	34.39	990	27.43	72.2	11.35	46.36	1478.
1200	2.61	34.46	1188	27.51	65.4	12.72	61.77	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 16
50-0.0 N 145-0.0 W
MØ.-6 DAY-21 GMT-17.3
31
32
33
34
35
SALINITY, 0/00

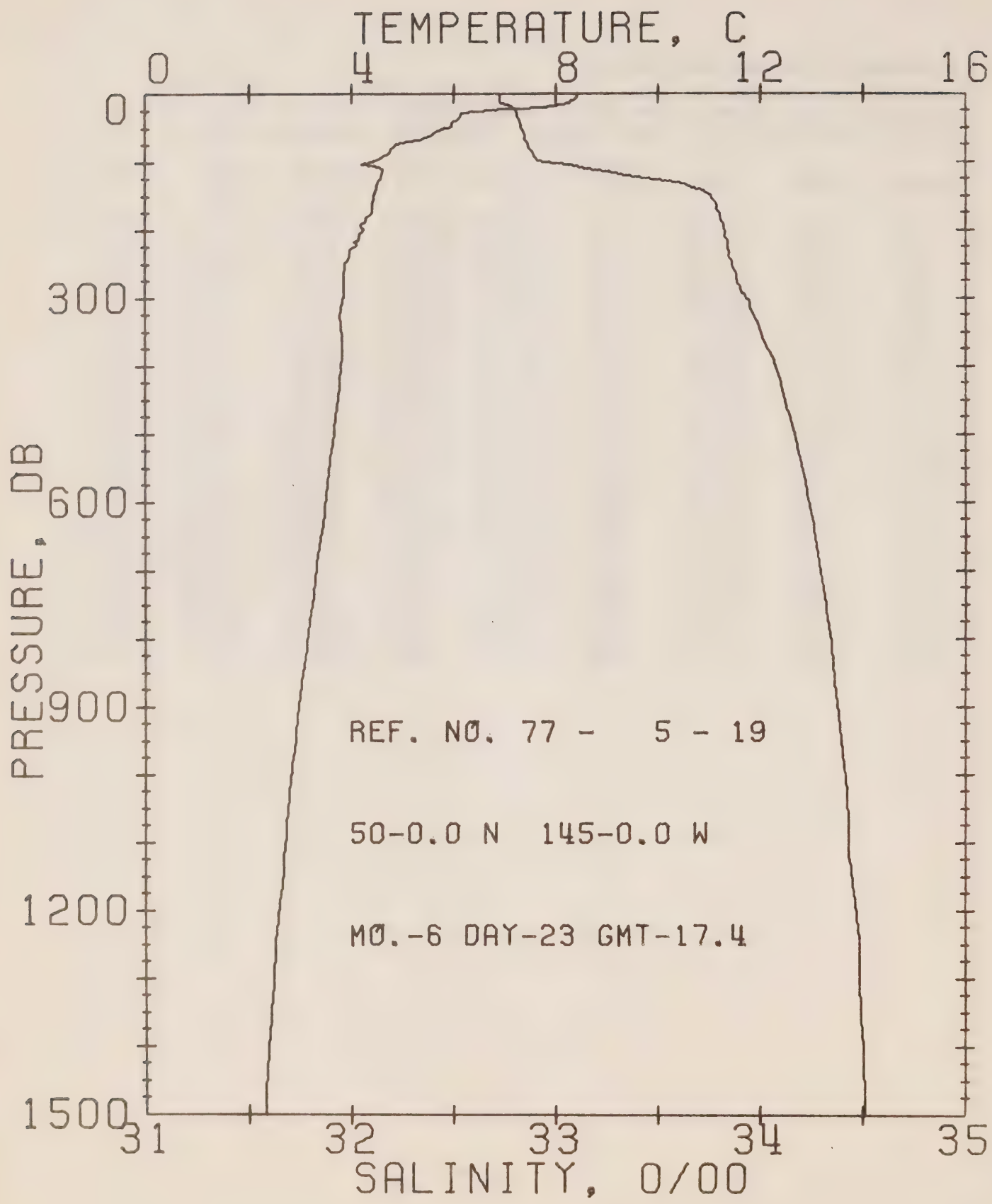
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 16 DATE 21/ 6/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.3
RESULTS OF STP CAST 146 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.73	32.75	0	25.42	256.3	0.0	0.0	1483.
10	8.68	32.79	10	25.47	252.7	0.26	0.01	1483.
20	6.31	32.83	20	25.83	218.3	0.49	0.05	1474.
30	5.98	32.84	30	25.87	214.1	0.70	0.10	1473.
50	5.68	32.85	50	25.92	210.1	1.13	0.28	1472.
75	4.81	32.92	75	26.07	195.5	1.63	0.60	1469.
100	4.61	33.23	99	26.34	170.4	2.10	1.01	1469.
125	4.49	33.75	124	26.77	130.3	2.46	1.42	1469.
150	4.26	33.81	149	26.84	123.2	2.78	1.87	1469.
175	4.11	33.83	174	26.87	120.8	3.08	2.37	1469.
200	4.01	33.85	199	26.90	118.2	3.38	2.94	1469.
225	3.95	33.87	223	26.92	116.3	3.67	3.58	1469.
250	3.90	33.90	248	26.94	114.3	3.96	4.27	1469.
300	3.86	33.95	298	26.99	110.3	4.52	5.84	1470.
400	3.78	34.06	397	27.08	102.4	5.59	9.64	1471.
500	3.65	34.15	496	27.17	94.7	6.57	14.14	1472.
600	3.49	34.22	595	27.24	88.7	7.49	19.27	1473.
800	3.14	34.32	793	27.35	78.8	9.16	31.17	1475.
1000	2.84	34.40	990	27.44	71.1	10.66	44.89	1478.
1200	2.60	34.46	1188	27.52	64.8	12.01	60.08	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 18
50-0.0 N 145-0.0 W
MØ.-6 DAY-22 GMT-20.8
31
32
33
34
35
SALINITY, 0/00

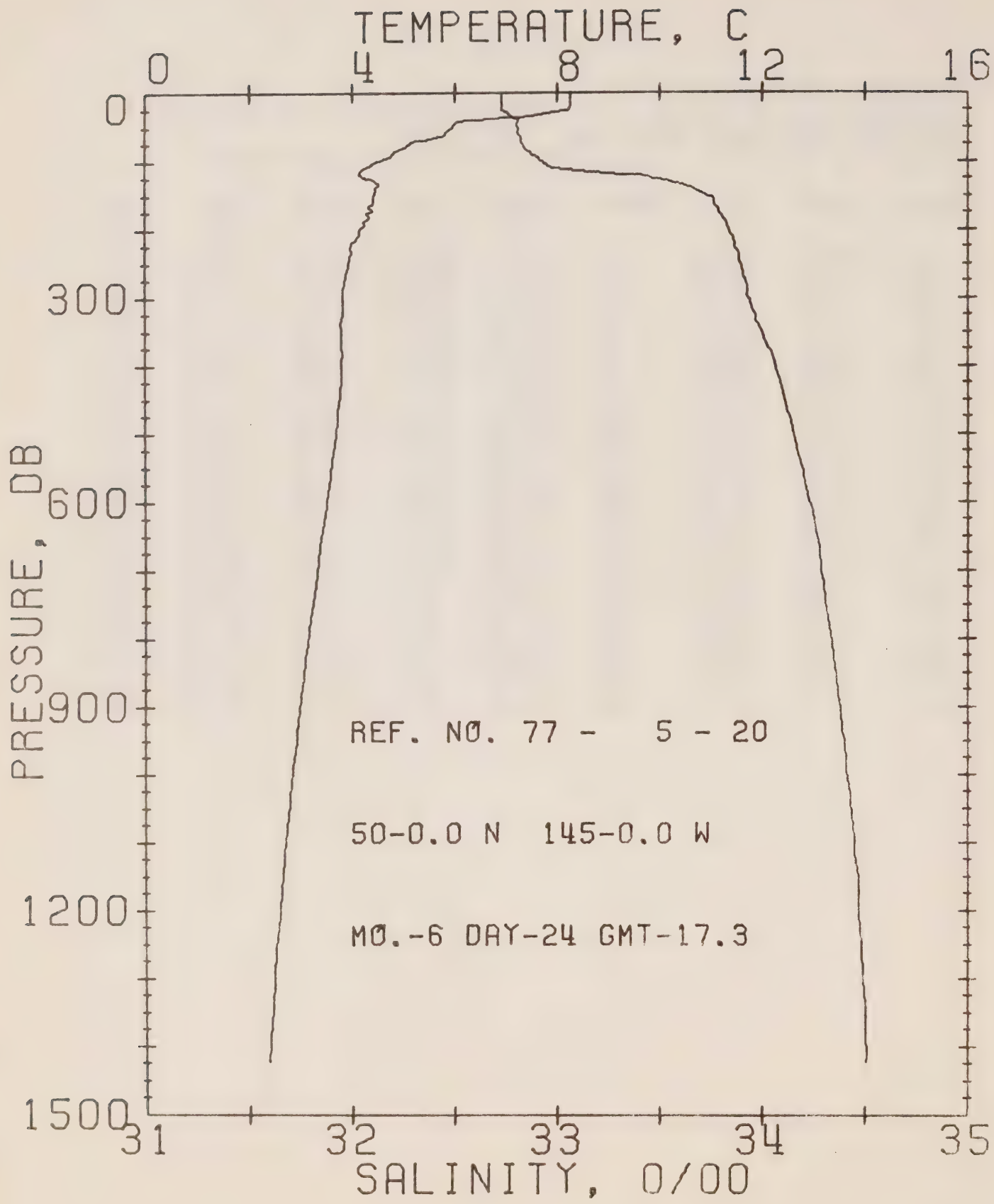
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 18 DATE 22/ 6/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 20.8
RESULTS OF STP CAST 168 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.84	32.73	0	25.39	259.5	0.0	0.0	1483.
10	8.72	32.74	10	25.42	257.4	0.26	0.01	1483.
20	8.18	32.78	20	25.53	246.8	0.51	0.05	1481.
30	6.24	32.80	30	25.81	220.2	0.74	0.11	1474.
50	5.78	32.82	50	25.88	213.5	1.18	0.29	1472.
75	4.85	32.87	75	26.03	199.7	1.69	0.61	1469.
100	4.57	33.25	99	26.36	168.4	2.16	1.03	1469.
125	4.47	33.60	124	26.65	141.4	2.54	1.47	1469.
150	4.38	33.77	149	26.79	127.8	2.87	1.93	1469.
175	4.13	33.80	174	26.84	123.3	3.19	2.45	1469.
200	3.98	33.82	199	26.88	120.4	3.49	3.03	1468.
225	3.89	33.84	223	26.90	118.2	3.79	3.68	1468.
250	3.85	33.86	248	26.92	116.3	4.08	4.39	1469.
300	3.85	33.94	298	26.98	110.9	4.65	5.98	1470.
400	3.76	34.08	397	27.10	100.4	5.70	9.72	1471.
500	3.64	34.15	496	27.17	94.5	6.68	14.19	1472.
600	3.46	34.22	595	27.24	88.3	7.59	19.31	1473.
800	3.13	34.33	793	27.36	78.0	9.25	31.08	1475.
1000	2.82	34.40	990	27.45	70.8	10.73	44.69	1477.
1200	2.54	34.46	1188	27.52	64.7	12.09	59.87	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 19
50-0.0 N 145-0.0 W
MØ.-6 DAY-23 GMT-17.4
31
32
33
34
35
SALINITY, 0/00

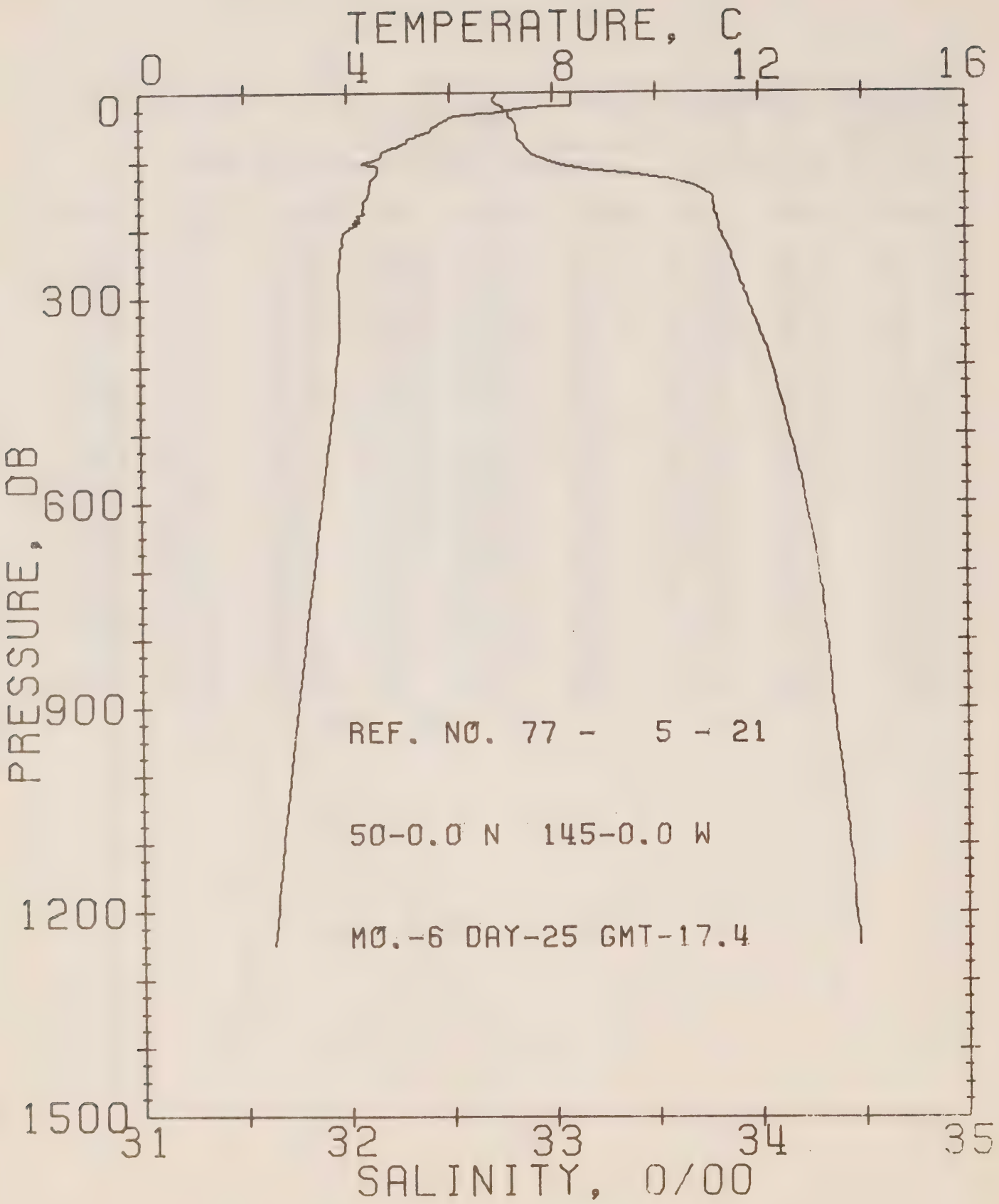
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 19 DATE 23/ 6/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.4
RESULTS OF STP CAST 157 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.42	32.72	0	25.45	254.1	0.0	0.0	1482.
10	8.34	32.73	10	25.47	252.6	0.25	0.01	1481.
20	7.76	32.79	20	25.60	240.2	0.50	0.05	1479.
30	6.13	32.81	30	25.83	218.1	0.73	0.11	1473.
50	5.86	32.83	50	25.88	213.7	1.16	0.28	1472.
75	4.86	32.86	75	26.02	200.5	1.68	0.61	1469.
100	4.39	32.95	99	26.14	189.1	2.17	1.05	1467.
125	4.55	33.48	124	26.55	151.1	2.60	1.54	1469.
150	4.44	33.75	149	26.77	129.8	2.95	2.02	1469.
175	4.38	33.79	174	26.81	126.3	3.27	2.55	1470.
200	4.22	33.82	199	26.85	122.8	3.58	3.15	1469.
225	4.04	33.84	223	26.88	119.8	3.88	3.80	1469.
250	3.86	33.86	248	26.92	116.6	4.17	4.52	1469.
300	3.83	33.93	298	26.98	111.4	4.75	6.12	1470.
400	3.80	34.07	397	27.09	101.2	5.81	9.90	1471.
500	3.65	34.17	496	27.18	93.5	6.78	14.36	1472.
600	3.48	34.24	595	27.26	87.2	7.68	19.41	1473.
800	3.13	34.35	793	27.38	76.9	9.32	31.07	1475.
1000	2.82	34.41	990	27.46	69.9	10.79	44.53	1477.
1200	2.58	34.47	1188	27.52	64.4	12.14	59.64	1480.
1500	2.31	34.51	1483	27.58	59.6	13.99	85.05	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 20
50-0.0 N 145-0.0 W
MO.-6 DAY-24 GMT-17.3
31
32
33
34
35
SALINITY, O/OO

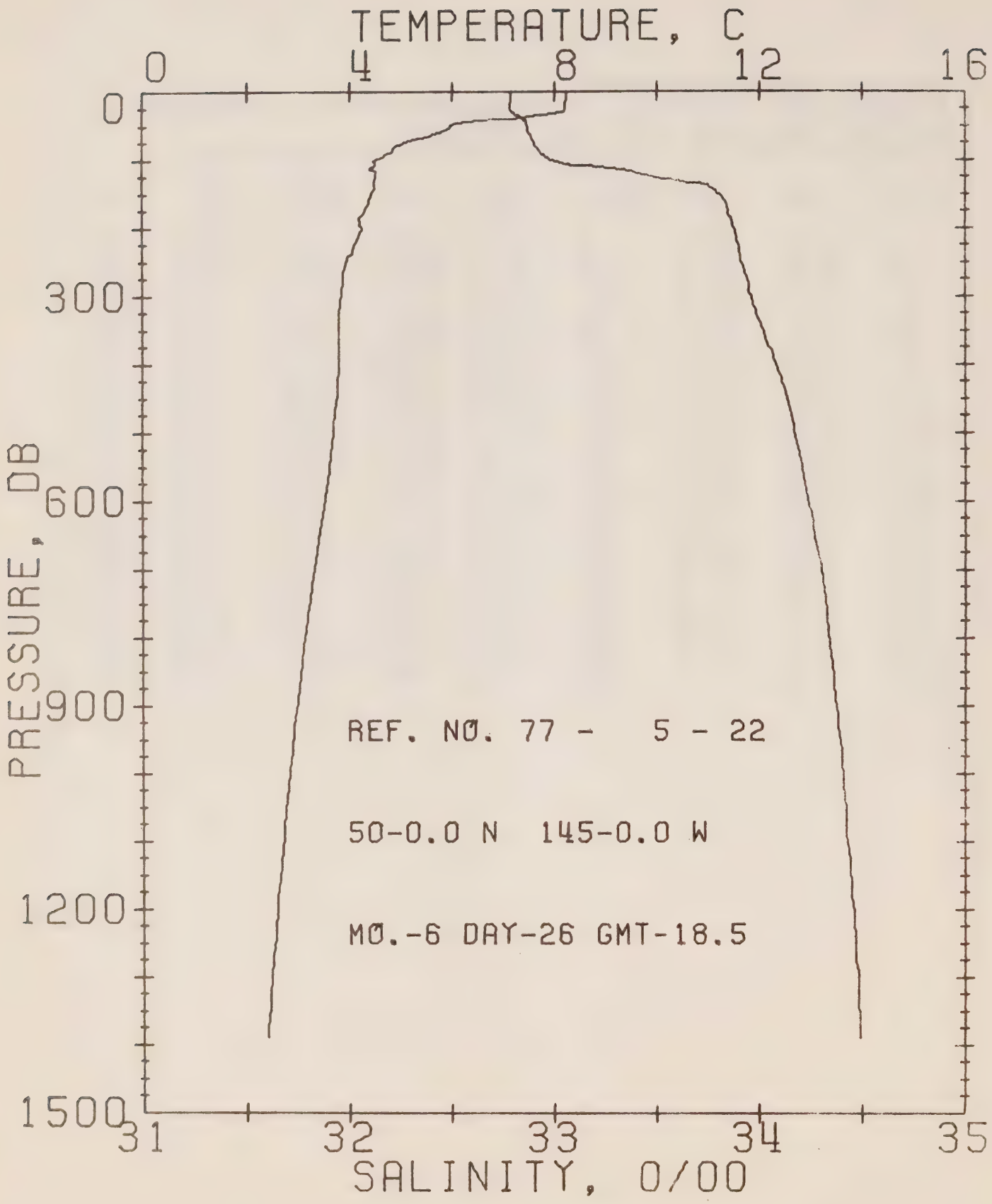
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 20 DATE 24/ 6/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.3
RESULTS OF STP CAST 174 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.26	32.73	0	25.48	251.2	0.0	0.0	1481.
10	8.26	32.73	10	25.48	251.5	0.25	0.01	1481.
20	8.26	32.73	20	25.48	251.7	0.50	0.05	1481.
30	7.78	32.75	30	25.56	243.7	0.75	0.11	1480.
50	5.94	32.80	50	25.85	216.8	1.20	0.30	1473.
75	5.11	32.82	75	25.96	205.9	1.74	0.64	1470.
100	4.55	32.92	99	26.10	193.2	2.24	1.08	1468.
125	4.26	33.47	124	26.57	148.9	2.68	1.58	1468.
150	4.42	33.73	149	26.76	131.5	3.02	2.07	1469.
175	4.29	33.79	174	26.82	125.7	3.35	2.60	1469.
200	4.15	33.83	199	26.87	121.1	3.65	3.19	1469.
225	3.97	33.87	223	26.92	116.8	3.95	3.84	1469.
250	3.92	33.89	248	26.94	114.8	4.24	4.54	1469.
300	3.81	33.93	298	26.98	111.2	4.80	6.11	1470.
400	3.80	34.06	397	27.09	102.0	5.87	9.91	1471.
500	3.68	34.15	496	27.17	94.8	6.85	14.42	1473.
600	3.50	34.23	595	27.25	88.0	7.77	19.53	1474.
800	3.13	34.34	793	27.37	77.5	9.41	31.24	1475.
1000	2.82	34.41	990	27.46	69.7	10.88	44.69	1477.
1200	2.59	34.47	1188	27.52	64.1	12.21	59.56	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 21
50-0.0 N 145-0.0 W
MØ.-6 DAY-25 GMT-17.4
31
32
33
34
35
SALINITY, 0/00

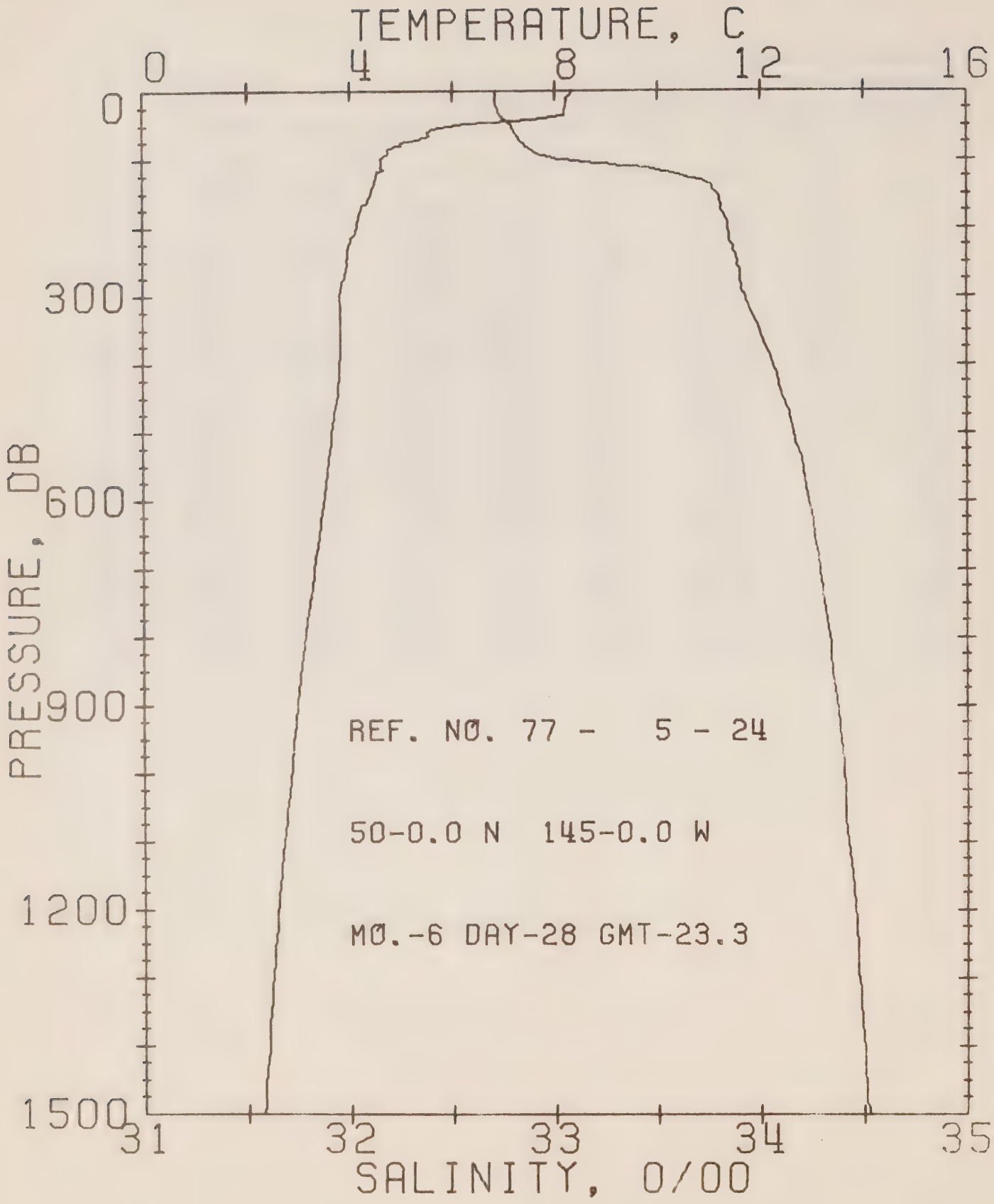
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 21 DATE 25/ 6/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.4
RESULTS OF STP CAST 152 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.36	32.72	0	25.46	253.2	0.0	0.0	1481.
10	8.38	32.71	10	25.45	254.4	0.25	0.01	1482.
20	8.34	32.75	20	25.48	251.3	0.51	0.05	1482.
30	6.75	32.78	30	25.73	227.9	0.74	0.11	1476.
50	5.71	32.82	50	25.89	212.7	1.18	0.29	1472.
75	5.09	32.85	75	25.99	203.9	1.70	0.62	1470.
100	4.45	32.98	99	26.16	187.5	2.19	1.06	1468.
125	4.49	33.51	124	26.58	148.0	2.62	1.55	1469.
150	4.39	33.77	149	26.79	127.9	2.96	2.02	1469.
175	4.32	33.79	174	26.82	126.0	3.28	2.55	1469.
200	4.02	33.81	199	26.86	121.5	3.59	3.14	1469.
225	3.89	33.85	223	26.90	117.8	3.89	3.79	1469.
250	3.84	33.87	248	26.93	115.4	4.18	4.49	1469.
300	3.85	33.94	298	26.98	110.9	4.74	6.07	1470.
400	3.78	34.06	397	27.09	101.9	5.81	9.86	1471.
500	3.63	34.14	496	27.17	95.0	6.79	14.37	1472.
600	3.47	34.22	595	27.24	88.6	7.70	19.49	1473.
800	3.14	34.32	793	27.36	78.7	9.37	31.31	1475.
1000	2.83	34.39	990	27.44	71.4	10.87	45.09	1477.
1200	2.58	34.45	1188	27.51	65.2	12.23	60.35	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 22
50-0.0 N 145-0.0 W
MØ.-6 DAY-26 GMT-18.5
31
32
33
34
35
SALINITY, 0/00

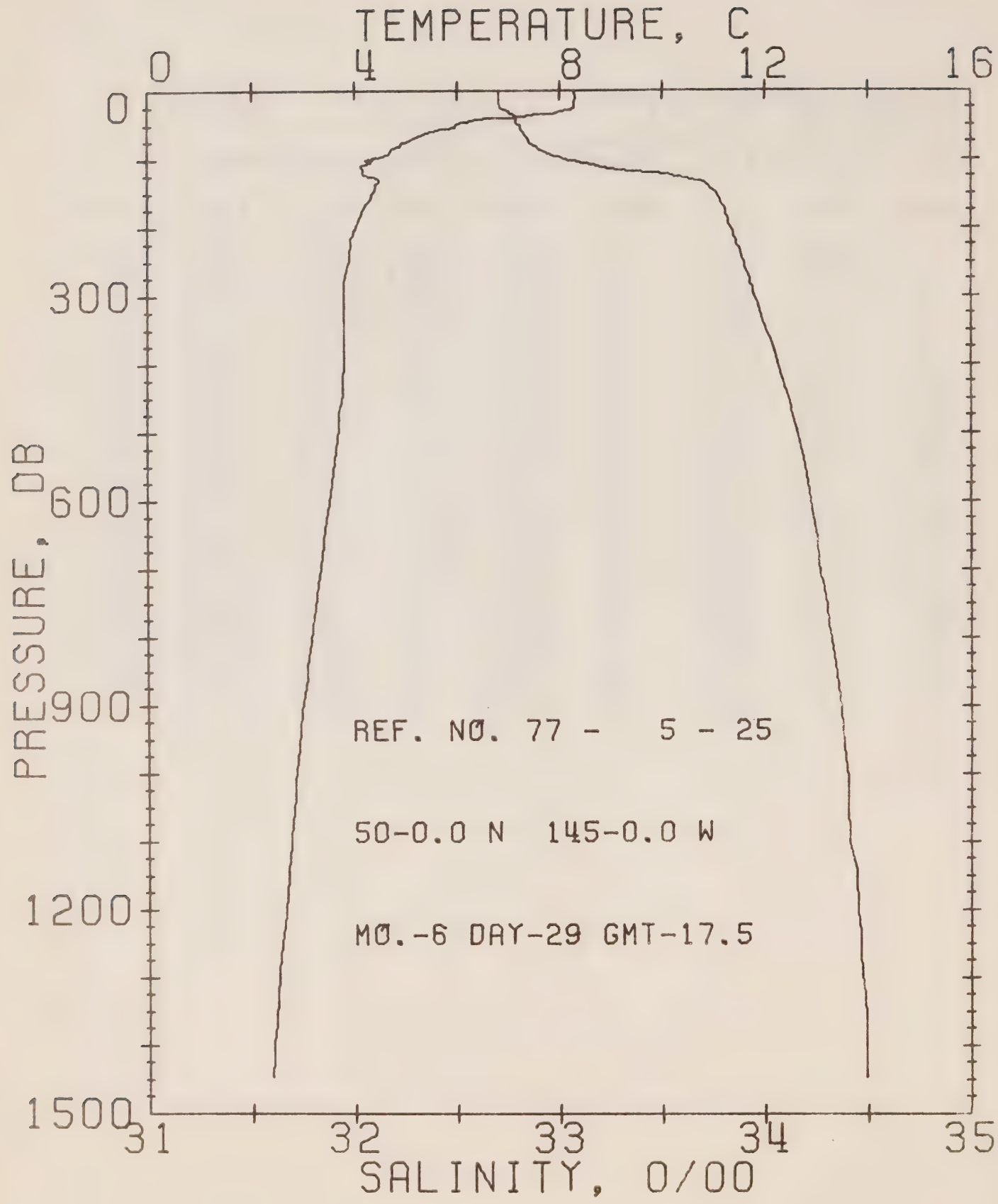
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 22 DATE 26/ 6/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 18.5
RESULTS OF STP CAST 185 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.25	32.79	0	25.53	246.5	0.0	0.0	1481.
10	8.23	32.79	10	25.53	246.6	0.25	0.01	1481.
20	8.22	32.78	20	25.52	247.3	0.49	0.05	1481.
30	8.19	32.79	30	25.54	246.4	0.74	0.11	1481.
50	5.96	32.86	50	25.89	212.6	1.19	0.30	1473.
75	5.03	32.90	75	26.03	199.5	1.71	0.63	1470.
100	4.52	32.98	99	26.15	188.1	2.20	1.06	1468.
125	4.50	33.47	124	26.55	151.1	2.62	1.54	1469.
150	4.42	33.79	149	26.81	126.4	2.96	2.01	1469.
175	4.27	33.85	174	26.87	120.9	3.27	2.52	1469.
200	4.25	33.87	199	26.89	119.3	3.57	3.09	1470.
225	4.09	33.90	223	26.92	116.0	3.86	3.73	1469.
250	3.92	33.91	248	26.95	113.5	4.15	4.43	1469.
300	3.83	33.96	298	27.00	109.2	4.70	5.98	1470.
400	3.80	34.08	397	27.10	101.0	5.75	9.73	1471.
500	3.68	34.17	496	27.18	93.6	6.72	14.15	1473.
600	3.50	34.24	595	27.25	87.6	7.62	19.21	1474.
800	3.12	34.34	793	27.37	77.3	9.26	30.85	1475.
1000	2.83	34.41	990	27.45	70.4	10.73	44.34	1477.
1200	2.59	34.46	1188	27.51	65.1	12.09	59.55	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 24
50-0.0 N 145-0.0 W
MØ.-6 DAY-28 GMT-23.3
31
32
33
34
35
SALINITY, 0/00

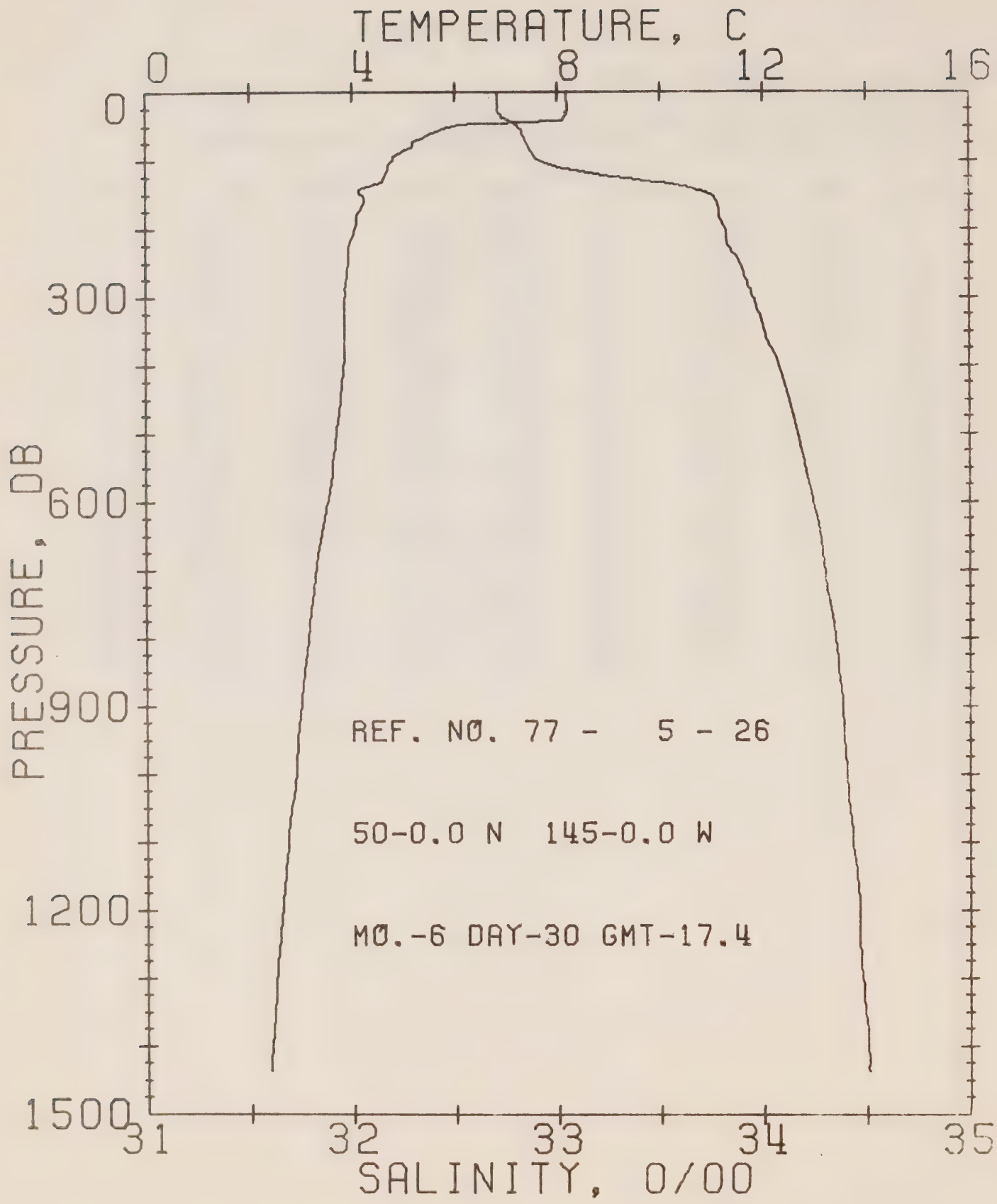
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 24 DATE 28/ 6/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 23.3
RESULTS OF STP CAST 170 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.32	32.71	0	25.45	253.4	0.0	0.0	1481.
10	8.24	32.71	10	25.47	252.7	0.25	0.01	1481.
20	8.22	32.71	20	25.47	252.6	0.51	0.05	1481.
30	8.20	32.72	30	25.48	251.8	0.76	0.12	1481.
50	6.16	32.78	50	25.81	220.9	1.24	0.31	1474.
75	5.08	32.83	75	25.98	204.8	1.77	0.65	1470.
100	4.60	33.01	99	26.17	186.7	2.26	1.09	1468.
125	4.51	33.63	124	26.67	139.5	2.66	1.54	1469.
150	4.40	33.79	149	26.80	126.9	2.99	2.00	1469.
175	4.19	33.81	174	26.85	123.1	3.30	2.52	1469.
200	4.11	33.84	199	26.88	120.3	3.61	3.10	1469.
225	3.98	33.86	223	26.90	117.9	3.90	3.74	1469.
250	3.94	33.89	248	26.93	115.4	4.19	4.45	1469.
300	3.80	33.92	298	26.97	111.9	4.76	6.04	1469.
400	3.80	34.06	397	27.08	102.4	5.84	9.86	1471.
500	3.64	34.16	496	27.18	94.1	6.82	14.35	1472.
600	3.48	34.23	595	27.25	87.4	7.72	19.41	1473.
800	3.12	34.33	793	27.37	77.7	9.37	31.13	1475.
1000	2.84	34.40	990	27.45	70.7	10.85	44.69	1477.
1200	2.57	34.46	1188	27.51	65.0	12.21	59.93	1480.
1500	2.30	34.52	1483	27.59	58.8	14.07	85.47	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 25
50-0.0 N 145-0.0 W
MØ.-6 DAY-29 GMT-17.5
31
32
33
34
35
SALINITY, 0/00

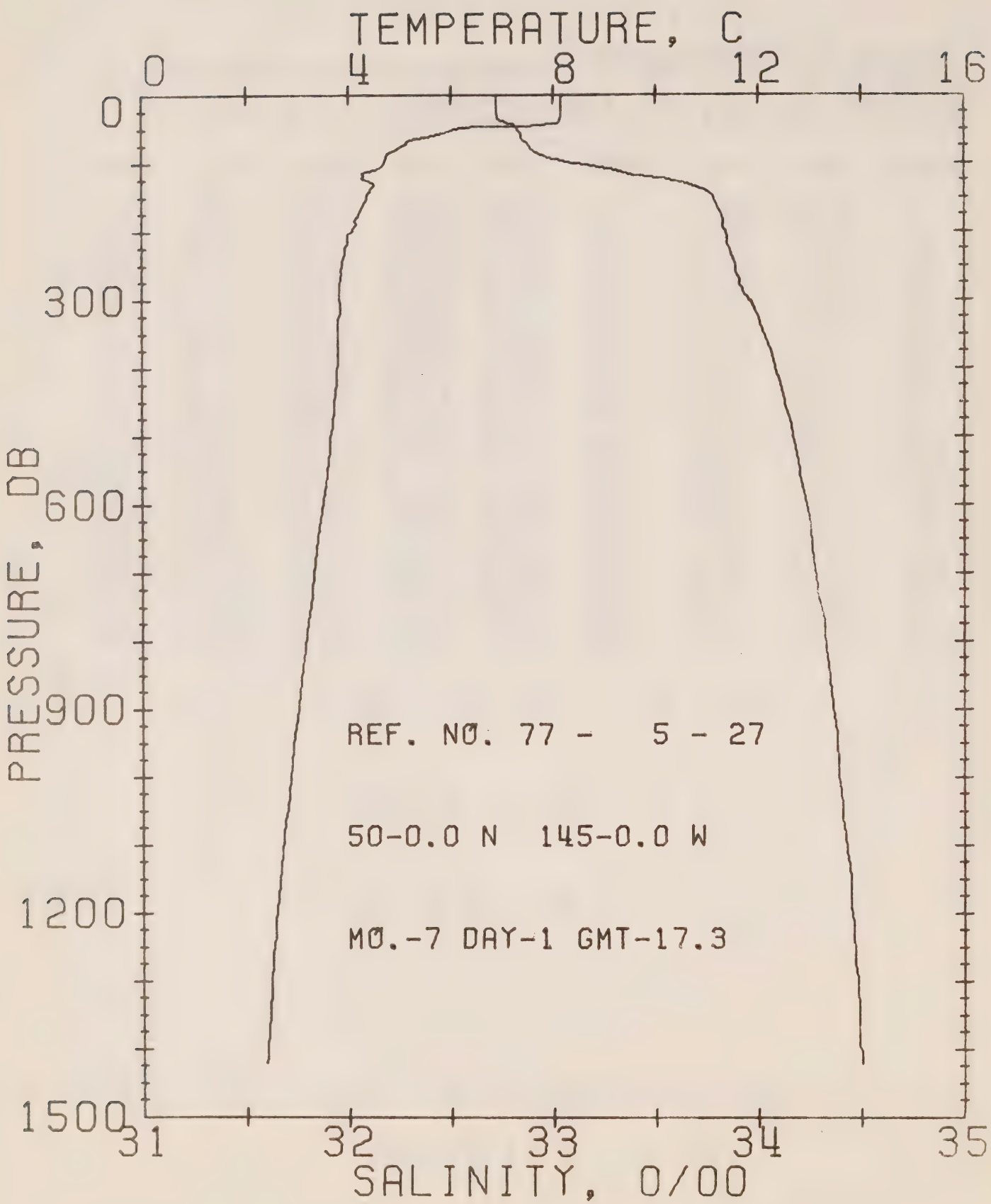
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 25 DATE 29/ 6/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.5
RESULTS OF STP CAST 174 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SJUND
0	8.30	32.71	0	25.46	253.2	0.0	0.0	1481.
10	8.31	32.70	10	25.45	254.4	0.25	0.01	1481.
20	8.29	32.70	20	25.45	254.3	0.51	0.05	1481.
30	8.08	32.74	30	25.51	248.6	0.76	0.12	1481.
50	5.98	32.80	50	25.84	217.5	1.22	0.30	1473.
75	4.96	32.85	75	26.00	202.3	1.75	0.64	1469.
100	4.27	33.02	99	26.21	182.7	2.24	1.07	1467.
125	4.30	33.56	124	26.64	142.6	2.65	1.54	1468.
150	4.34	33.76	149	26.79	128.2	2.98	2.01	1469.
175	4.16	33.81	174	26.85	123.0	3.30	2.53	1469.
200	4.01	33.83	199	26.88	120.0	3.60	3.11	1469.
225	3.91	33.86	223	26.91	116.9	3.90	3.75	1469.
250	3.88	33.89	248	26.94	114.3	4.18	4.45	1469.
300	3.78	33.95	298	27.00	109.4	4.74	6.01	1469.
400	3.79	34.06	397	27.08	102.1	5.80	9.78	1471.
500	3.66	34.15	496	27.17	94.4	6.78	14.28	1472.
600	3.50	34.22	595	27.24	88.7	7.70	19.39	1474.
800	3.15	34.32	793	27.35	79.1	9.37	31.31	1475.
1000	2.86	34.40	990	27.44	71.3	10.87	45.00	1478.
1200	2.63	34.45	1188	27.50	66.1	12.25	60.47	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 26
50-0.0 N 145-0.0 W
MØ.-6 DAY-30 GMT-17.4
31
32
33
34
35
SALINITY, 0/00

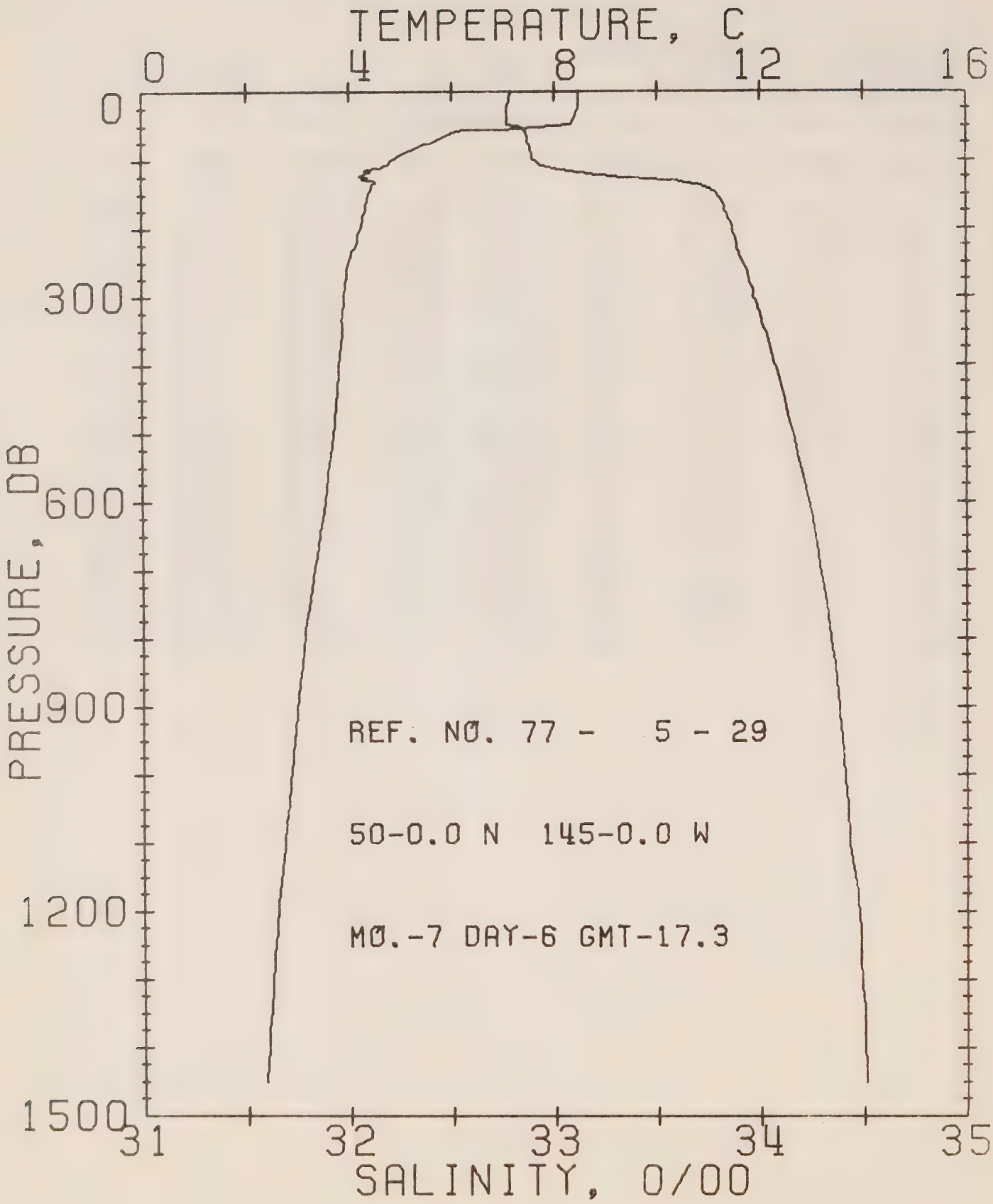
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 26 DATE 30/ 6/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.4
RESULTS OF STP CAST 143 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.20	32.71	0	25.47	251.8	0.0	0.0	1481.
10	8.20	32.71	10	25.47	252.2	0.25	0.01	1481.
20	8.21	32.71	20	25.47	252.4	0.50	0.05	1481.
30	8.17	32.71	30	25.48	252.0	0.76	0.12	1481.
50	5.99	32.80	50	25.85	217.1	1.24	0.31	1473.
75	5.17	32.84	75	25.97	205.0	1.77	0.65	1470.
100	4.77	32.91	99	26.07	196.1	2.27	1.09	1469.
125	4.61	33.30	124	26.40	165.0	2.73	1.62	1469.
150	4.17	33.74	149	26.80	127.6	3.09	2.12	1468.
175	4.12	33.79	174	26.84	123.8	3.40	2.64	1469.
200	4.04	33.81	199	26.86	121.6	3.71	3.23	1469.
225	3.93	33.83	223	26.89	119.4	4.01	3.88	1469.
250	3.91	33.89	248	26.94	114.9	4.30	4.59	1469.
300	3.85	33.95	298	26.99	110.2	4.87	6.16	1470.
400	3.82	34.07	397	27.09	101.4	5.92	9.94	1471.
500	3.68	34.17	496	27.18	93.8	6.90	14.40	1473.
600	3.50	34.24	595	27.26	87.2	7.80	19.47	1474.
800	3.11	34.35	793	27.38	76.4	9.43	31.04	1475.
1000	2.87	34.40	990	27.44	71.2	10.90	44.50	1478.
1200	2.60	34.46	1188	27.51	65.1	12.26	59.70	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 27
50-0.0 N 145-0.0 W
MØ.-7 DAY-1 GMT-17.3
31
32
33
34
35
SALINITY, 0/00

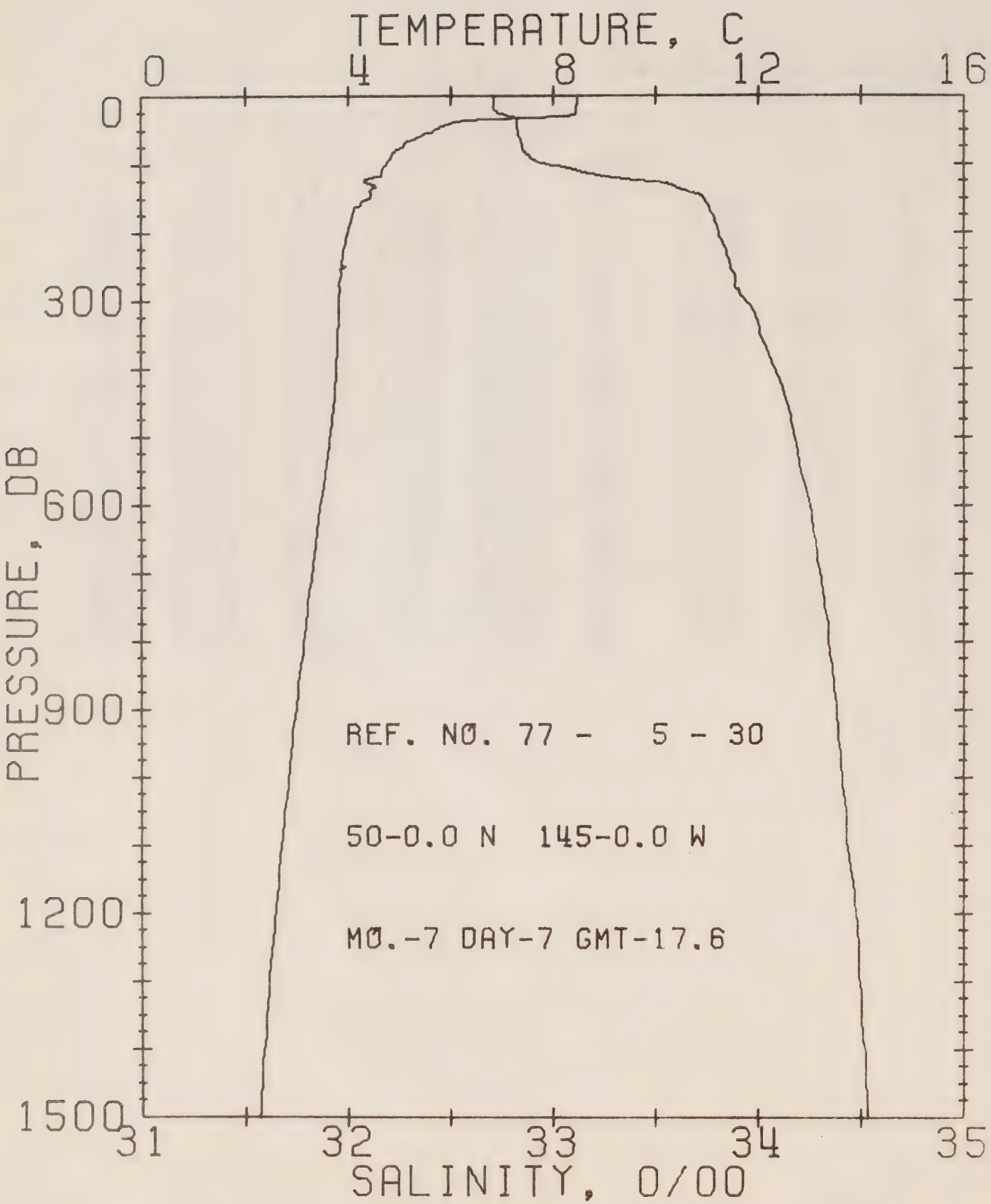
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 27 DATE 1/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.3
RESULTS OF STP CAST 164 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.18	32.72	0	25.48	250.7	0.0	0.0	1481.
10	8.16	32.72	10	25.49	250.8	0.25	0.01	1481.
20	8.15	32.72	20	25.49	250.9	0.50	0.05	1481.
30	8.15	32.72	30	25.49	251.0	0.75	0.12	1481.
50	6.11	32.82	50	25.84	217.4	1.24	0.31	1473.
75	5.06	32.87	75	26.01	201.6	1.76	0.64	1470.
100	4.68	33.09	99	26.23	181.3	2.24	1.07	1469.
125	4.33	33.57	124	26.64	142.1	2.65	1.53	1468.
150	4.35	33.78	149	26.80	127.0	2.98	2.00	1469.
175	4.20	33.82	174	26.85	122.7	3.29	2.52	1469.
200	4.10	33.84	199	26.88	120.1	3.59	3.10	1469.
225	3.93	33.86	223	26.91	117.3	3.89	3.74	1469.
250	3.87	33.89	248	26.94	114.8	4.18	4.44	1469.
300	3.82	33.95	298	26.99	109.9	4.74	6.02	1470.
400	3.78	34.08	397	27.10	100.3	5.79	9.73	1471.
500	3.64	34.17	496	27.19	93.3	6.75	14.16	1472.
600	3.48	34.23	595	27.25	87.3	7.66	19.23	1473.
800	3.16	34.33	793	27.36	78.6	9.32	31.04	1475.
1000	2.86	34.39	990	27.44	71.9	10.82	44.74	1478.
1200	2.59	34.45	1188	27.51	65.4	12.18	60.03	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 29
50-0.0 N 145-0.0 W
MØ.-7 DAY-6 GMT-17.3
31
32
33
34
35
SALINITY, 0/00

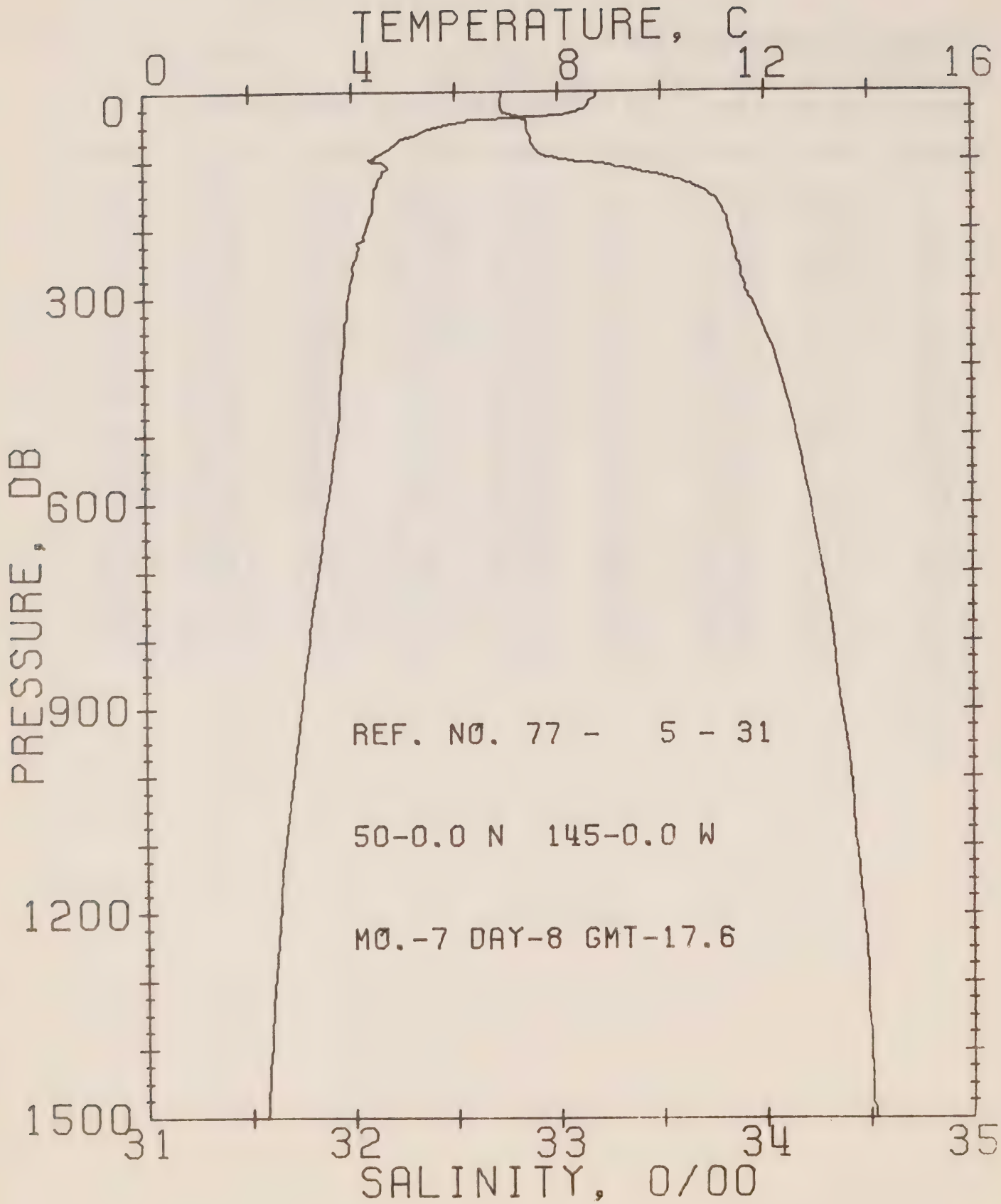
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 29 DATE 6/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.3
RESULTS OF STP CAST 146 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.49	32.79	0	25.49	249.9	0.0	0.0	1482.
10	8.48	32.78	10	25.49	250.7	0.25	0.01	1482.
20	8.47	32.77	20	25.48	251.4	0.50	0.05	1482.
30	8.45	32.77	30	25.48	251.5	0.75	0.12	1482.
50	8.06	32.80	50	25.56	244.2	1.25	0.32	1481.
75	5.58	32.87	75	25.95	207.7	1.80	0.66	1472.
100	4.80	32.90	99	26.06	197.1	2.30	1.11	1469.
125	4.34	33.34	124	26.46	159.5	2.76	1.64	1468.
150	4.37	33.79	149	26.81	126.6	3.10	2.12	1469.
175	4.29	33.83	174	26.85	122.6	3.42	2.63	1469.
200	4.22	33.87	199	26.89	119.4	3.72	3.21	1470.
225	4.12	33.89	223	26.92	116.9	4.01	3.85	1470.
250	3.99	33.92	248	26.95	113.6	4.30	4.55	1469.
300	3.89	33.97	298	27.00	109.0	4.86	6.10	1470.
400	3.80	34.07	397	27.09	101.5	5.91	9.85	1471.
500	3.67	34.16	496	27.17	94.4	6.89	14.33	1473.
600	3.51	34.23	595	27.25	87.8	7.80	19.44	1474.
800	3.11	34.34	793	27.38	76.9	9.44	31.10	1475.
1000	2.85	34.41	990	27.45	70.4	10.91	44.54	1478.
1200	2.58	34.47	1188	27.53	63.9	12.26	59.62	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 30
50-0.0 N 145-0.0 W
MØ.-7 DAY-7 GMT-17.6
31
32
33
34
35
SALINITY, 0/00

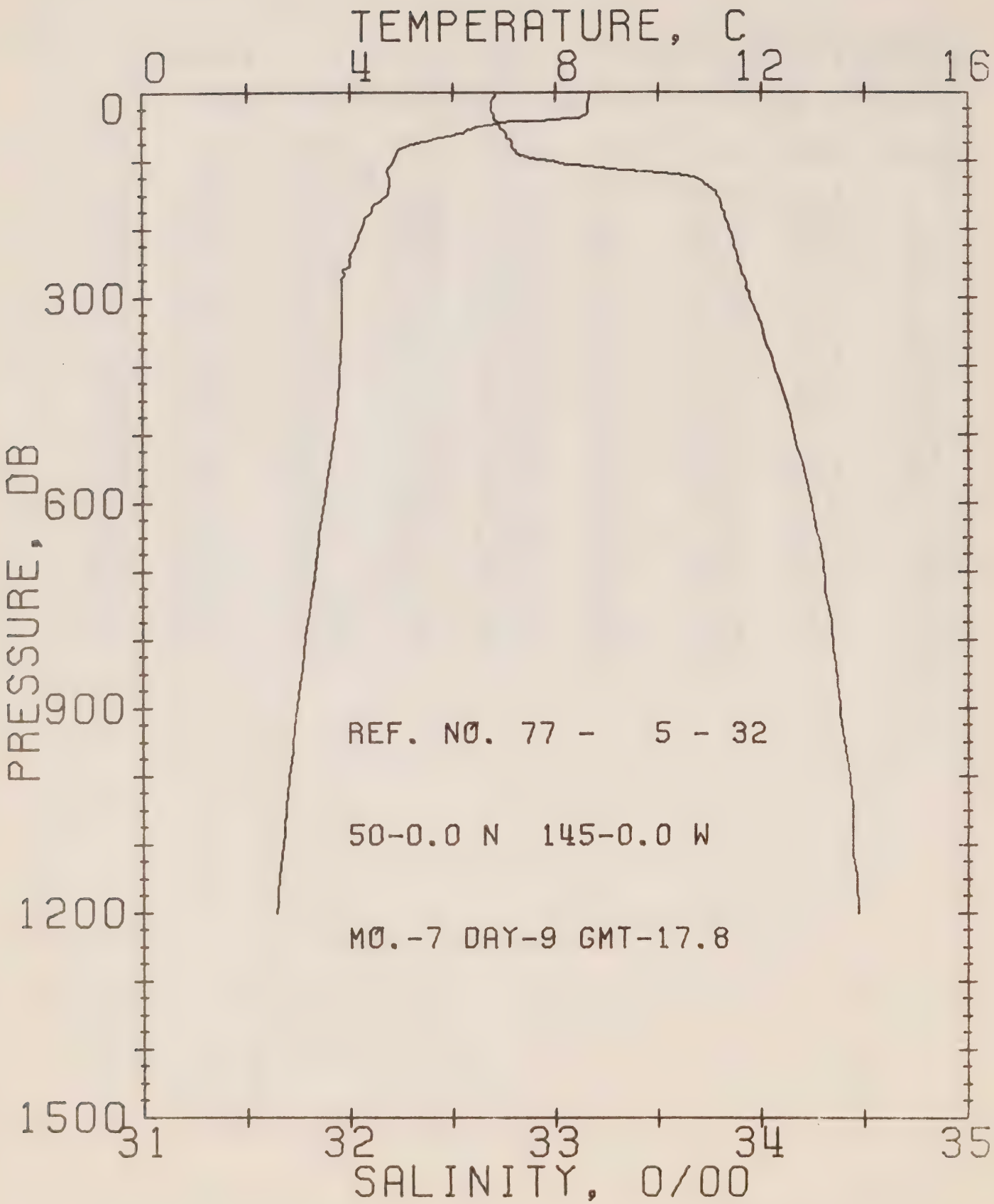
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 30 DATE 7/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.6
RESULTS OF STP CAST 189 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.48	32.71	0	25.43	255.7	0.0	0.0	1482.
10	8.47	32.71	10	25.43	256.0	0.26	0.01	1482.
20	8.46	32.71	20	25.43	256.0	0.51	0.05	1482.
30	8.26	32.80	30	25.53	246.6	0.77	0.12	1482.
50	5.66	32.82	50	25.90	211.9	1.21	0.30	1472.
75	5.04	32.85	75	25.99	203.2	1.72	0.62	1470.
100	4.73	32.96	99	26.12	191.6	2.22	1.07	1469.
125	4.31	33.42	124	26.53	153.0	2.66	1.57	1468.
150	4.40	33.73	149	26.76	131.3	3.01	2.06	1469.
175	4.07	33.78	174	26.83	124.4	3.33	2.58	1468.
200	3.98	33.81	199	26.86	121.4	3.63	3.17	1468.
225	3.90	33.84	223	26.90	118.1	3.93	3.82	1469.
250	3.92	33.87	248	26.92	116.8	4.23	4.53	1469.
300	3.81	33.94	298	26.99	110.5	4.80	6.13	1470.
400	3.76	34.08	397	27.10	100.3	5.85	9.87	1471.
500	3.64	34.18	496	27.19	92.7	6.81	14.27	1472.
600	3.45	34.25	595	27.27	86.1	7.71	19.28	1473.
800	3.13	34.34	793	27.37	77.3	9.33	30.84	1475.
1000	2.83	34.41	990	27.45	70.3	10.80	44.28	1477.
1200	2.58	34.47	1188	27.53	63.8	12.14	59.30	1480.
1500	2.27	34.53	1483	27.60	57.7	13.95	84.20	1483.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
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PRESSURE, DB
REF. NØ. 77 - 5 - 31
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MØ.-7 DAY-8 GMT-17.6
31
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SALINITY, 0/00

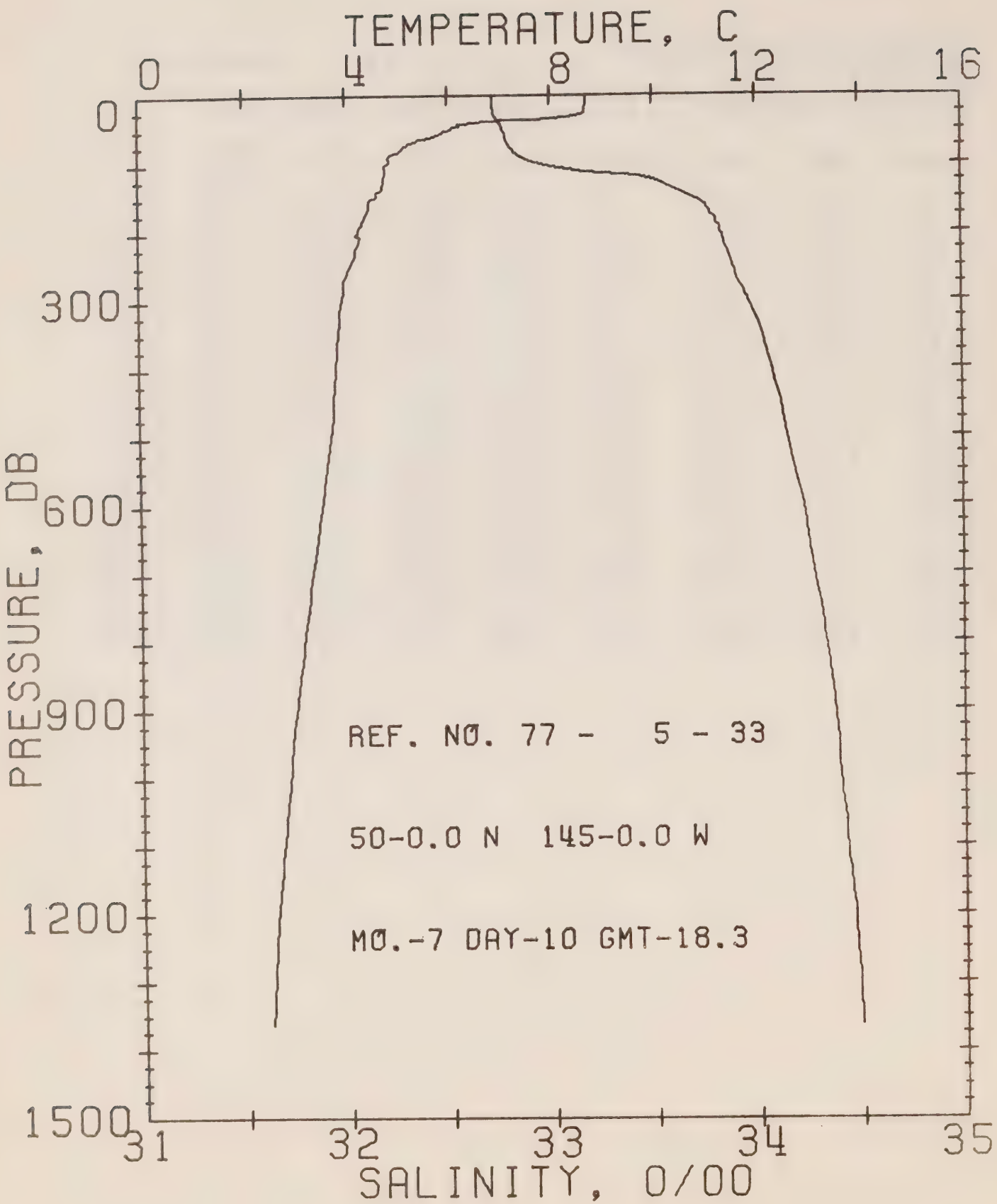
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 31 DATE 8/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.6
RESULTS OF STP CAST 173 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.76	32.73	0	25.40	258.3	0.0	0.0	1483.
10	8.73	32.72	10	25.40	258.7	0.26	0.01	1483.
20	8.58	32.72	20	25.42	257.1	0.52	0.05	1483.
30	8.36	32.73	30	25.46	253.2	0.77	0.12	1482.
50	5.74	32.85	50	25.91	210.8	1.23	0.30	1472.
75	4.85	32.87	75	26.03	199.7	1.74	0.63	1469.
100	4.38	33.06	99	26.23	180.7	2.22	1.06	1467.
125	4.51	33.54	124	26.60	146.3	2.63	1.52	1469.
150	4.42	33.73	149	26.76	131.3	2.97	2.00	1469.
175	4.38	33.80	174	26.82	125.8	3.29	2.53	1470.
200	4.26	33.83	199	26.85	122.6	3.60	3.13	1470.
225	4.12	33.85	223	26.88	119.8	3.91	3.78	1469.
250	4.05	33.88	248	26.91	117.3	4.20	4.50	1470.
300	3.91	33.92	298	26.96	113.0	4.78	6.11	1470.
400	3.79	34.06	397	27.09	102.0	5.85	9.91	1471.
500	3.69	34.15	496	27.17	95.1	6.83	14.41	1473.
600	3.49	34.22	595	27.24	88.6	7.75	19.56	1473.
800	3.14	34.33	793	27.36	78.2	9.41	31.40	1475.
1000	2.81	34.41	990	27.46	69.8	10.90	44.99	1477.
1200	2.54	34.46	1188	27.52	64.0	12.23	59.96	1480.
1500	2.27	34.52	1483	27.59	58.4	14.06	85.10	1483.


TEMPERATURE, C
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300
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1200
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PRESSURE, DB
REF. NØ. 77 - 5 - 32
50-0.0 N 145-0.0 W
MØ.-7 DAY-9 GMT-17.8
31
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SALINITY, O/OO

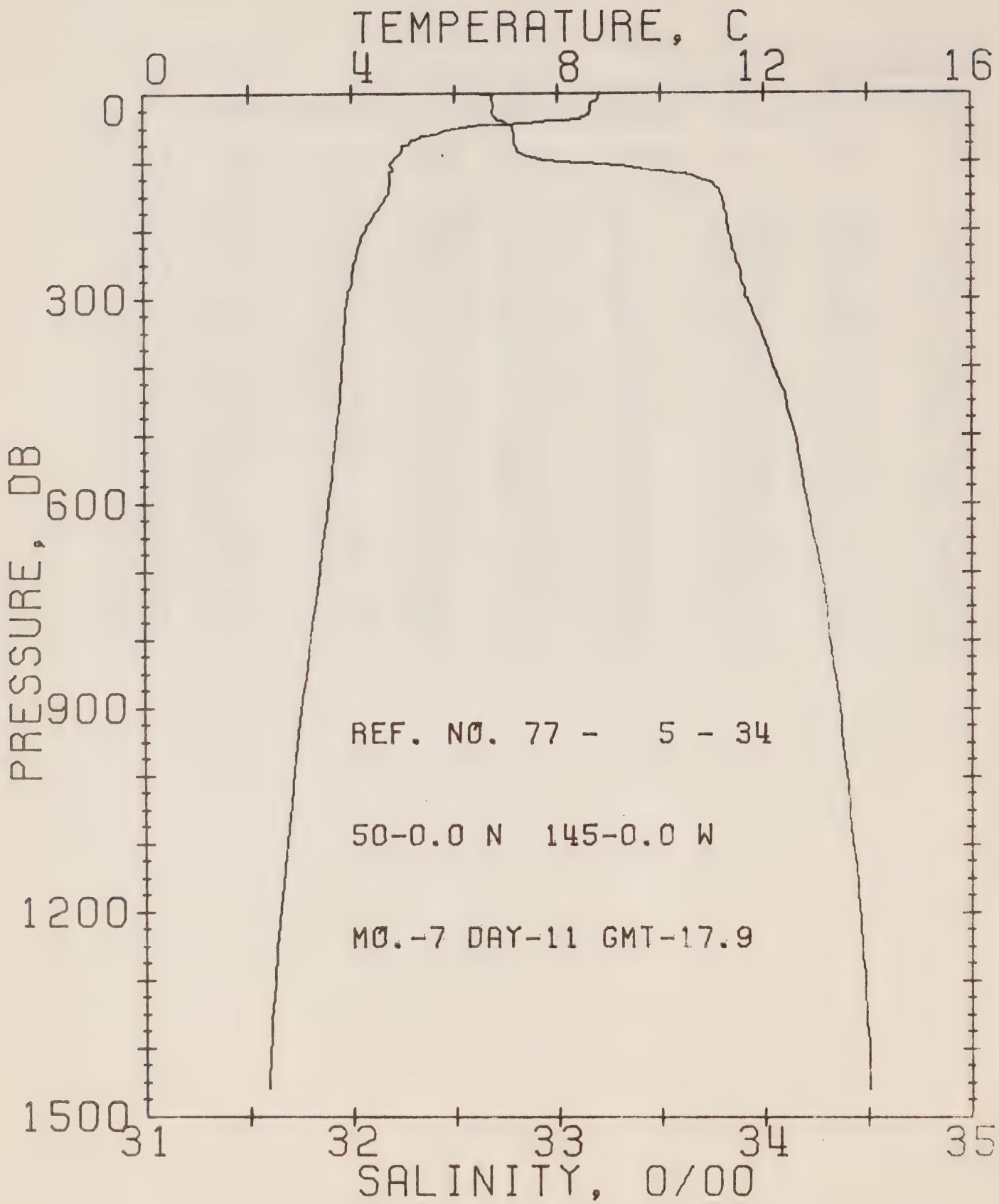
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 32 DATE 9/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.8
RESULTS OF STP CAST 147 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.66	32.70	0	25.40	259.0	0.0	0.0	1482.
10	8.65	32.70	10	25.40	259.3	0.26	0.01	1483.
20	8.65	32.69	20	25.39	260.2	0.52	0.05	1483.
30	8.63	32.69	30	25.39	260.1	0.78	0.12	1483.
50	6.55	32.73	50	25.71	229.6	1.27	0.32	1475.
75	5.29	32.78	75	25.91	210.8	1.82	0.67	1470.
100	4.83	32.96	99	26.10	193.1	2.34	1.12	1469.
125	4.77	33.68	124	26.68	138.6	2.75	1.60	1470.
150	4.72	33.78	149	26.77	130.4	3.09	2.07	1471.
175	4.41	33.82	174	26.83	124.7	3.41	2.60	1470.
200	4.23	33.84	199	26.87	121.4	3.71	3.18	1470.
225	4.10	33.87	223	26.90	118.1	4.01	3.83	1469.
250	4.01	33.89	248	26.93	115.9	4.31	4.54	1469.
300	3.83	33.94	298	26.99	110.7	4.87	6.11	1470.
400	3.80	34.06	397	27.09	102.0	5.93	9.90	1471.
500	3.69	34.16	496	27.17	94.5	6.91	14.38	1473.
600	3.49	34.24	595	27.26	87.0	7.82	19.45	1473.
800	3.13	34.35	793	27.38	76.8	9.44	31.03	1475.
1000	2.81	34.43	990	27.47	68.6	10.90	44.38	1477.
1200	2.57	34.47	1188	27.52	63.9	12.23	59.25	1480.


TEMPERATURE, C
0
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300
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1200
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PRESSURE, DB
REF. NØ. 77 - 5 - 33
50-0.0 N 145-0.0 W
MØ.-7 DAY-10 GMT-18.3
31
32
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SALINITY, 0/00

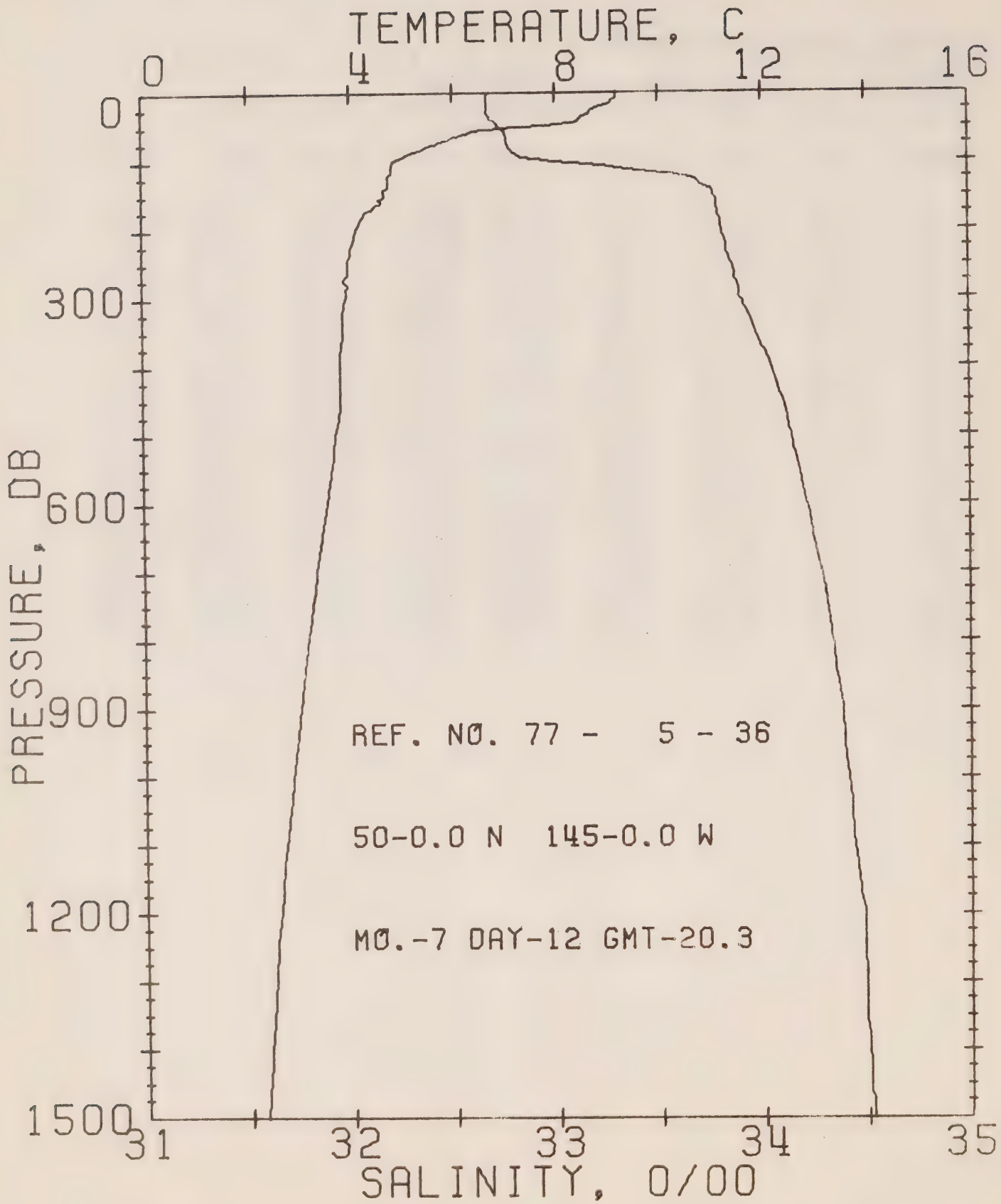
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 33 DATE 10/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 18.3
RESULTS OF STP CAST 159 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.72	32.72	0	25.40	258.4	0.0	0.0	1483.
10	8.72	32.72	10	25.40	258.8	0.26	0.01	1483.
20	8.70	32.72	20	25.41	258.6	0.52	0.05	1483.
30	8.55	32.73	30	25.44	255.9	0.78	0.12	1483.
50	6.06	32.77	50	25.81	220.5	1.24	0.31	1473.
75	5.13	32.80	75	25.94	207.9	1.78	0.65	1470.
100	4.81	32.94	99	26.09	194.2	2.28	1.10	1469.
125	4.74	33.51	124	26.55	151.2	2.72	1.59	1470.
150	4.59	33.69	149	26.71	136.0	3.08	2.09	1470.
175	4.38	33.78	174	26.80	127.3	3.40	2.63	1470.
200	4.25	33.83	199	26.86	122.5	3.71	3.23	1470.
225	4.19	33.86	223	26.88	120.0	4.02	3.88	1470.
250	4.08	33.89	248	26.92	116.9	4.31	4.60	1470.
300	3.91	33.96	298	26.99	110.0	4.88	6.19	1470.
400	3.79	34.07	397	27.10	101.0	5.93	9.93	1471.
500	3.68	34.15	496	27.17	95.1	6.91	14.41	1473.
600	3.50	34.22	595	27.24	88.4	7.83	19.55	1473.
800	3.14	34.33	793	27.36	78.2	9.49	31.38	1475.
1000	2.83	34.40	990	27.44	71.1	10.97	44.91	1477.
1200	2.58	34.46	1188	27.52	64.8	12.33	60.15	1480.


TEMPERATURE, C
0
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1200
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PRESSURE, DB
REF. NØ. 77 - 5 - 34
50-0.0 N 145-0.0 W
MØ.-7 DAY-11 GMT-17.9
31
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SALINITY, 0/00

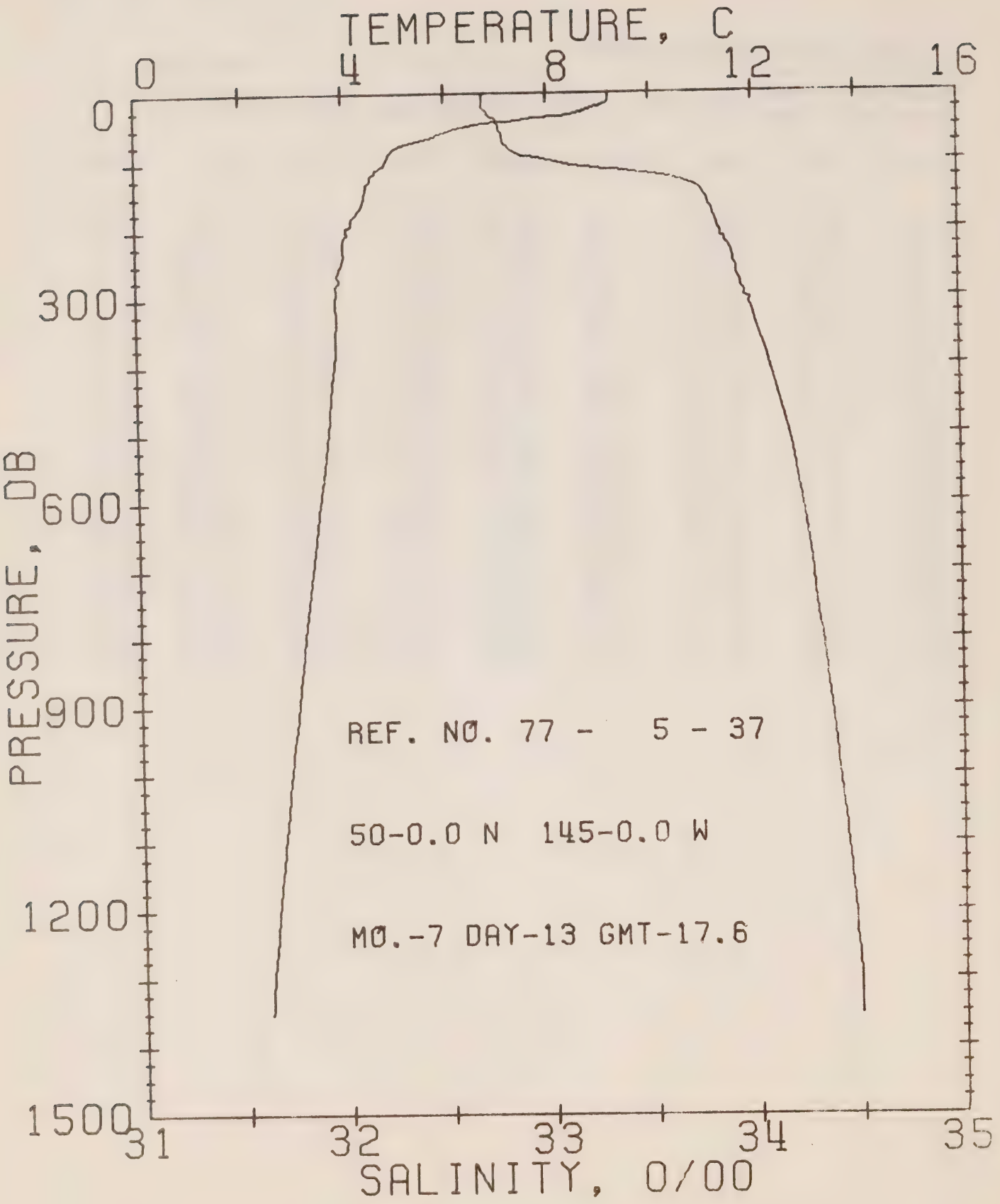
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 34 DATE 11/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.9
RESULTS OF STP CAST 161 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.82	32.61	0	25.30	268.1	0.0	0.0	1483.
10	8.78	32.68	10	25.36	262.7	0.26	0.01	1483.
20	8.63	32.69	20	25.39	260.0	0.52	0.05	1483.
30	8.61	32.68	30	25.39	260.6	0.78	0.12	1483.
50	6.14	32.78	50	25.81	220.7	1.28	0.32	1474.
75	5.10	32.79	75	25.94	208.3	1.81	0.66	1470.
100	4.78	33.00	99	26.14	189.6	2.32	1.11	1469.
125	4.76	33.69	124	26.69	137.7	2.71	1.56	1470.
150	4.68	33.79	149	26.78	129.3	3.04	2.02	1471.
175	4.45	33.81	174	26.82	125.5	3.36	2.55	1470.
200	4.26	33.83	199	26.85	122.6	3.67	3.14	1470.
225	4.12	33.85	223	26.88	120.0	3.98	3.80	1469.
250	4.03	33.87	248	26.91	117.7	4.27	4.52	1470.
300	3.91	33.91	298	26.95	113.7	4.85	6.14	1470.
400	3.80	34.04	397	27.07	103.8	5.93	9.99	1471.
500	3.68	34.15	496	27.16	95.4	6.92	14.53	1473.
600	3.52	34.20	595	27.23	90.2	7.85	19.73	1474.
800	3.17	34.31	793	27.35	79.7	9.54	31.73	1476.
1000	2.86	34.39	990	27.44	71.6	11.04	45.51	1478.
1200	2.57	34.46	1188	27.51	65.0	12.41	60.79	1480.


TEMPERATURE, C
0
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16
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300
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PRESSURE, DB
REF. NØ. 77 - 5 - 36
50-0.0 N 145-0.0 W
MØ.-7 DAY-12 GMT-20.3
31
32
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35
SALINITY, 0/00

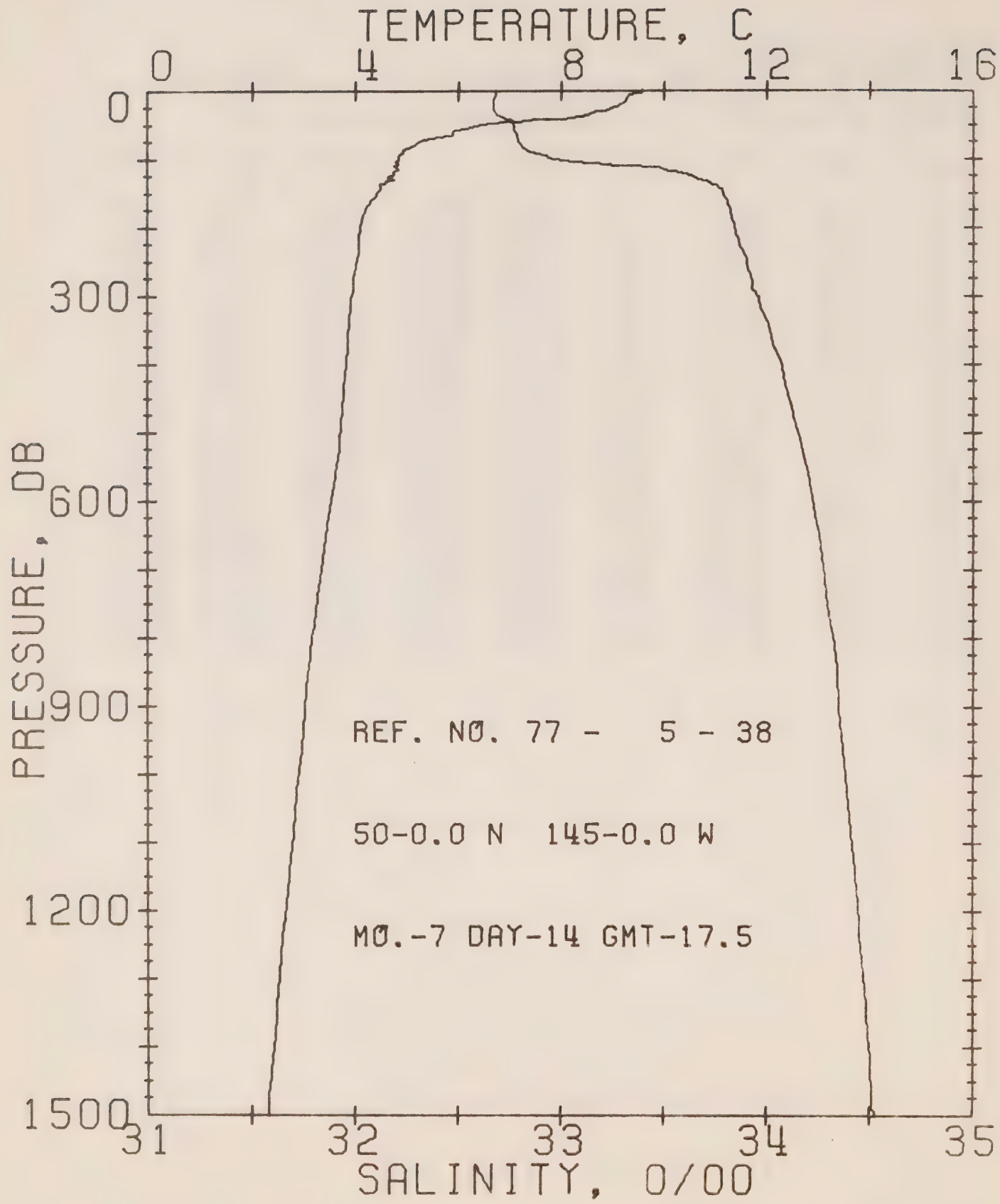
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 36 DATE 12/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 20.3
RESULTS OF STP CAST 176 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.19	32.68	0	25.30	268.4	0.0	0.0	1484.
10	9.17	32.67	10	25.29	269.2	0.27	0.01	1484.
20	8.91	32.67	20	25.33	265.5	0.54	0.05	1484.
30	8.66	32.67	30	25.37	261.9	0.80	0.12	1483.
50	7.42	32.73	50	25.60	240.7	1.31	0.33	1479.
75	5.65	32.76	75	25.85	216.7	1.87	0.69	1472.
100	4.84	32.98	99	26.12	191.5	2.39	1.15	1469.
125	4.75	33.67	124	26.67	139.4	2.80	1.61	1470.
150	4.66	33.77	149	26.76	130.8	3.14	2.08	1470.
175	4.28	33.79	174	26.82	125.5	3.46	2.62	1469.
200	4.11	33.80	199	26.85	122.9	3.77	3.21	1469.
225	3.99	33.83	223	26.88	120.0	4.07	3.87	1469.
250	3.95	33.85	248	26.90	118.1	4.37	4.59	1469.
300	3.90	33.89	298	26.94	115.2	4.95	6.22	1470.
400	3.80	34.04	397	27.07	103.8	6.04	10.10	1471.
500	3.69	34.14	496	27.16	95.9	7.04	14.67	1473.
600	3.52	34.21	595	27.23	89.6	7.97	19.87	1474.
800	3.15	34.33	793	27.36	77.8	9.63	31.70	1475.
1000	2.84	34.41	990	27.45	70.2	11.11	45.24	1478.
1200	2.58	34.48	1188	27.53	63.3	12.45	60.26	1480.
1500	2.28	34.52	1483	27.59	58.5	14.29	85.50	1484.


TEMPERATURE, C
0
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16
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300
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PRESSURE, DB
REF. NØ. 77 - 5 - 37
50-0.0 N 145-0.0 W
MØ.-7 DAY-13 GMT-17.6
31
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SALINITY, 0/00

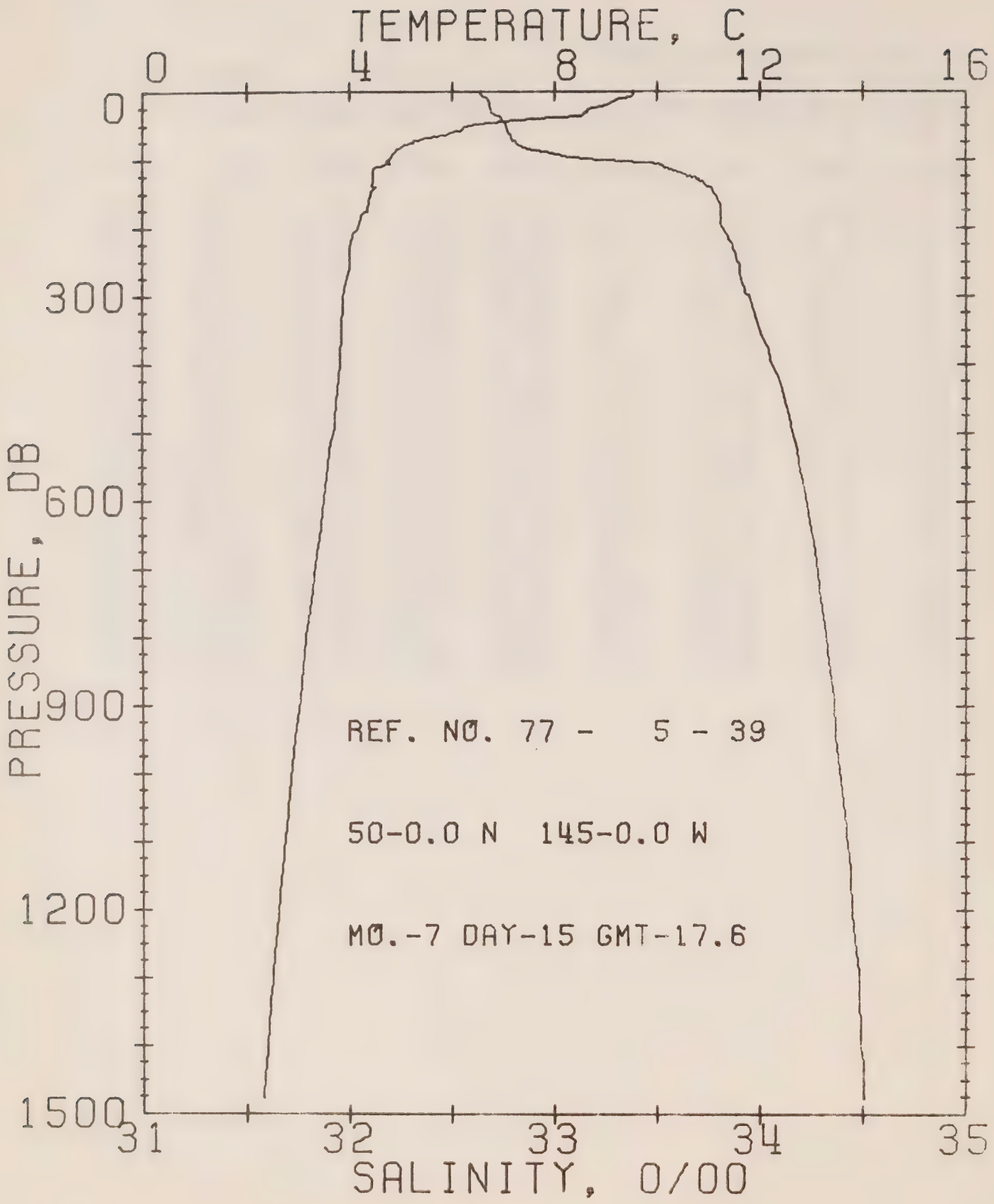
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 37 DATE 13/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.6
RESULTS OF STP CAST 141 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.23	32.70	0	25.31	267.5	0.0	0.0	1485.
10	9.23	32.69	10	25.30	268.6	0.27	0.01	1485.
20	9.01	32.69	20	25.33	265.5	0.54	0.05	1484.
30	8.56	32.71	30	25.42	257.6	0.80	0.12	1483.
50	6.35	32.76	50	25.77	224.4	1.28	0.32	1474.
75	5.19	32.79	75	25.93	209.0	1.82	0.66	1470.
100	4.84	33.02	99	26.15	188.2	2.32	1.11	1469.
125	4.55	33.60	124	26.64	142.4	2.74	1.58	1469.
150	4.43	33.77	149	26.79	128.6	3.07	2.05	1469.
175	4.26	33.81	174	26.83	124.2	3.39	2.57	1469.
200	4.07	33.83	199	26.88	120.3	3.69	3.15	1469.
225	4.01	33.88	223	26.92	116.2	3.99	3.79	1469.
250	3.97	33.91	248	26.95	113.8	4.28	4.49	1469.
300	3.84	33.96	298	27.00	109.3	4.83	6.05	1470.
400	3.80	34.08	397	27.10	101.0	5.88	9.79	1471.
500	3.67	34.17	496	27.18	93.6	6.86	14.24	1473.
600	3.51	34.23	595	27.25	88.0	7.76	19.32	1474.
800	3.17	34.32	793	27.35	79.0	9.43	31.20	1476.
1000	2.87	34.40	990	27.44	71.4	10.94	44.97	1478.
1200	2.61	34.47	1188	27.52	64.6	12.29	60.15	1480.


TEMPERATURE, C
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300
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PRESSURE, DB
REF. NØ. 77 - 5 - 38
50-0.0 N 145-0.0 W
MØ.-7 DAY-14 GMT-17.5
31
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SALINITY, 0/00

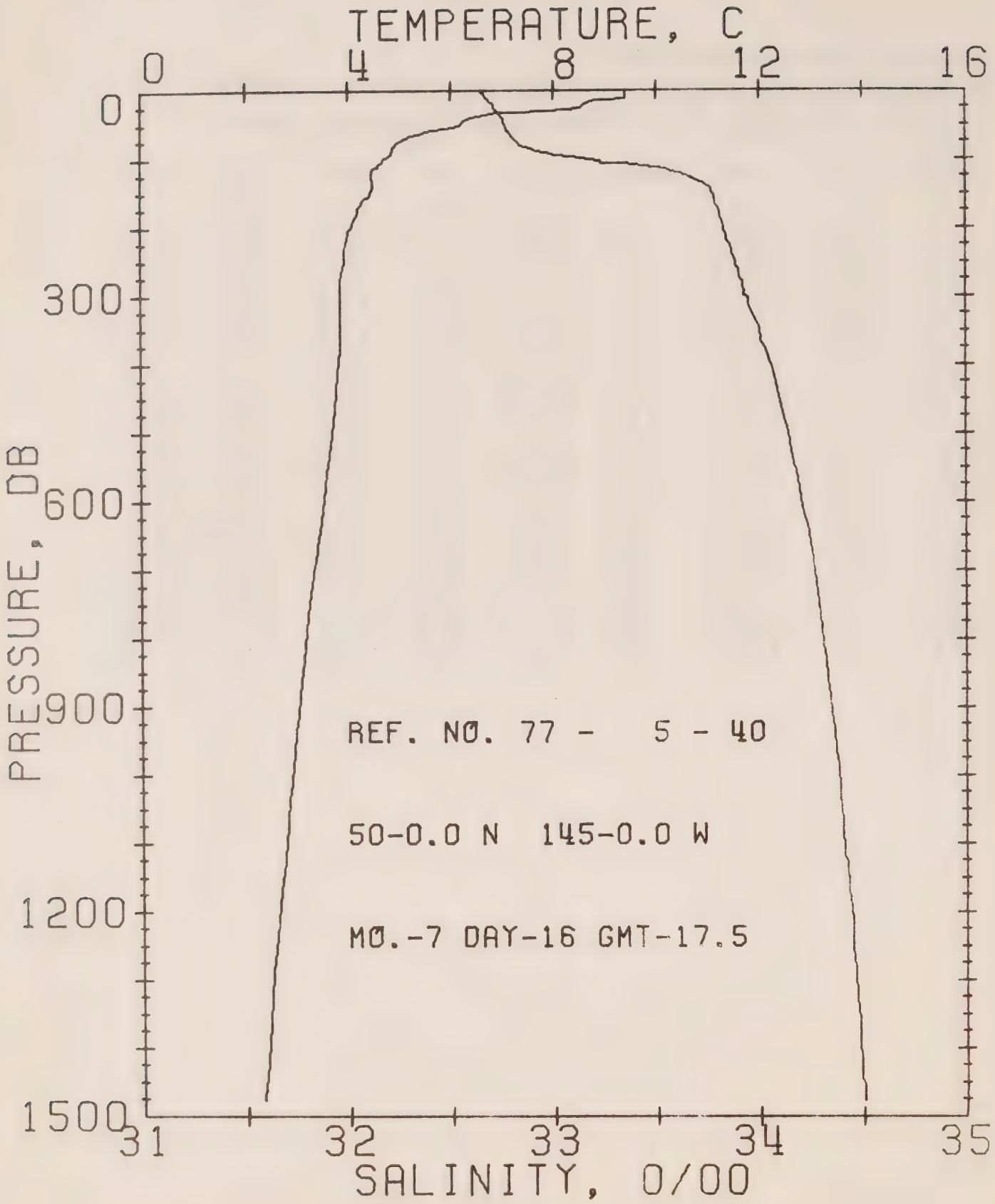
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 38 DATE 14/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.5
RESULTS OF STP CAST 157 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.57	32.68	0	25.24	274.2	0.0	0.0	1486.
10	9.30	32.68	10	25.28	270.6	0.27	0.01	1485.
20	9.17	32.67	20	25.29	269.4	0.54	0.06	1485.
30	8.84	32.67	30	25.34	264.7	0.81	0.12	1484.
50	6.43	32.76	50	25.76	225.7	1.31	0.32	1475.
75	5.24	32.79	75	25.92	209.9	1.85	0.67	1470.
100	4.81	32.97	99	26.11	191.9	2.36	1.12	1469.
125	4.65	33.64	124	26.66	140.2	2.77	1.59	1470.
150	4.41	33.78	149	26.80	127.1	3.10	2.05	1469.
175	4.17	33.82	174	26.85	122.4	3.41	2.57	1469.
200	4.08	33.84	199	26.88	119.9	3.71	3.14	1469.
225	4.05	33.86	223	26.90	118.1	4.01	3.79	1469.
250	4.01	33.90	248	26.94	115.1	4.30	4.49	1469.
300	3.92	33.95	298	26.98	110.9	4.87	6.08	1470.
400	3.81	34.07	397	27.09	101.4	5.93	9.86	1471.
500	3.70	34.15	496	27.17	95.1	6.92	14.38	1473.
600	3.51	34.22	595	27.24	88.7	7.83	19.51	1474.
800	3.16	34.32	793	27.35	78.9	9.50	31.41	1475.
1000	2.89	34.38	990	27.43	72.9	11.02	45.31	1478.
1200	2.65	34.44	1188	27.50	66.8	12.42	60.91	1480.
1500	2.31	34.52	1483	27.59	58.9	14.30	86.77	1484.


TEMPERATURE, C
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PRESSURE, DB
REF. NO. 77 - 5 - 39
50-0.0 N 145-0.0 W
MO.-7 DAY-15 GMT-17.6
31
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35
SALINITY, O/OO

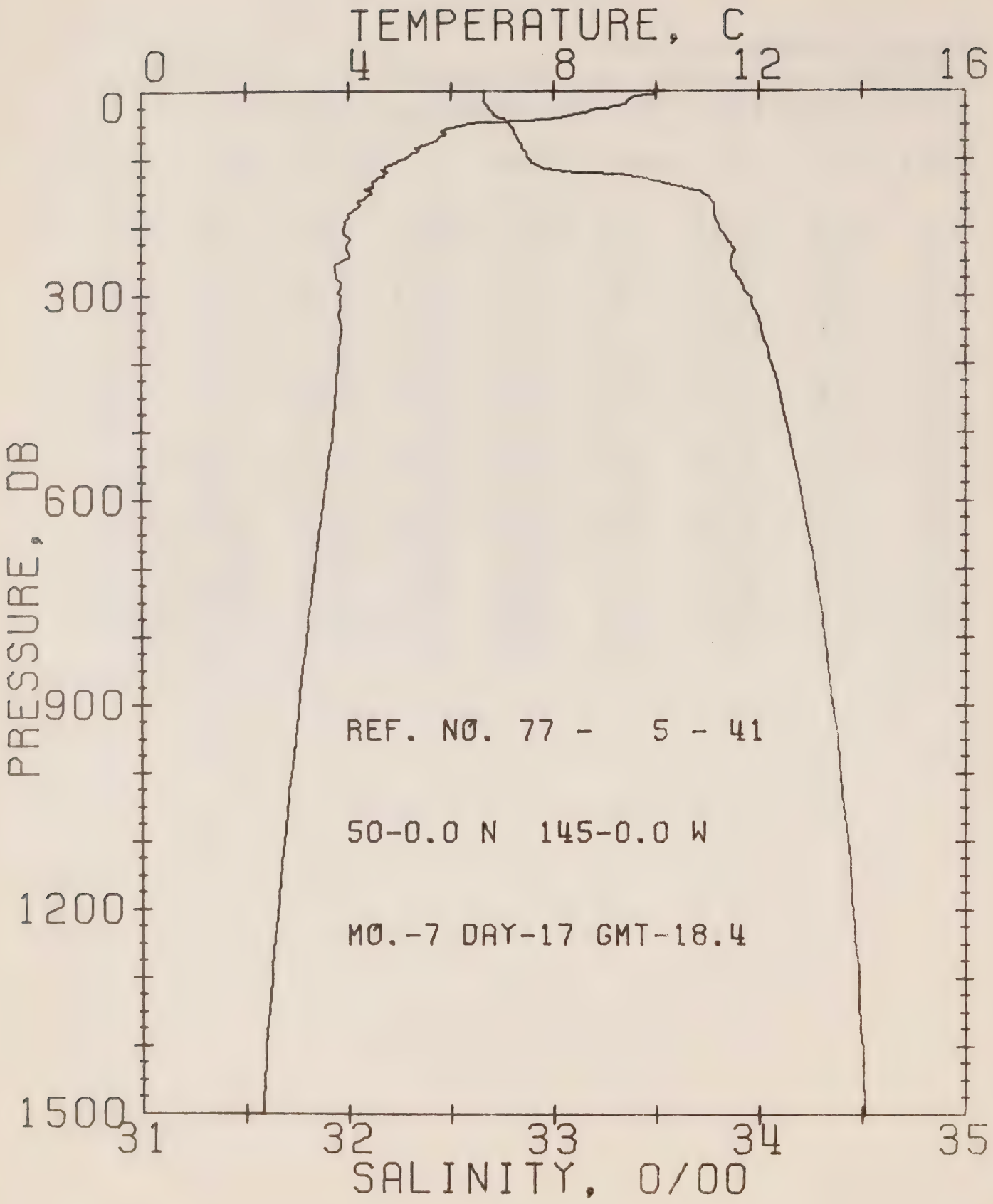
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 39 DATE 15/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.6
RESULTS OF STP CAST 153 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.54	32.64	0	25.21	276.6	0.0	0.0	1486.
10	9.36	32.67	10	25.26	272.0	0.28	0.01	1485.
20	9.02	32.68	20	25.32	266.3	0.54	0.06	1484.
30	8.61	32.69	30	25.40	259.8	0.81	0.12	1483.
50	6.41	32.75	50	25.75	226.0	1.29	0.32	1475.
75	5.22	32.81	75	25.94	208.1	1.84	0.66	1470.
100	4.78	33.20	99	26.30	174.4	2.33	1.10	1469.
125	4.45	33.66	124	26.70	136.6	2.70	1.52	1469.
150	4.41	33.78	149	26.79	127.8	3.03	1.98	1469.
175	4.34	33.81	174	26.83	124.6	3.34	2.50	1470.
200	4.15	33.82	199	26.85	122.4	3.65	3.09	1469.
225	4.00	33.86	223	26.91	117.4	3.95	3.74	1469.
250	3.99	33.89	248	26.93	115.7	4.24	4.45	1469.
300	3.87	33.95	298	26.99	110.4	4.81	6.04	1470.
400	3.80	34.06	397	27.08	102.3	5.88	9.84	1471.
500	3.67	34.16	496	27.17	94.4	6.86	14.33	1473.
600	3.49	34.22	595	27.24	88.4	7.77	19.43	1473.
800	3.16	34.32	793	27.35	78.9	9.44	31.32	1475.
1000	2.87	34.39	990	27.43	72.0	10.94	45.10	1478.
1200	2.62	34.45	1188	27.50	66.0	12.32	60.50	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 40
50-0.0 N 145-0.0 W
MØ.-7 DAY-16 GMT-17.5
31
32
33
34
35
SALINITY, 0/00

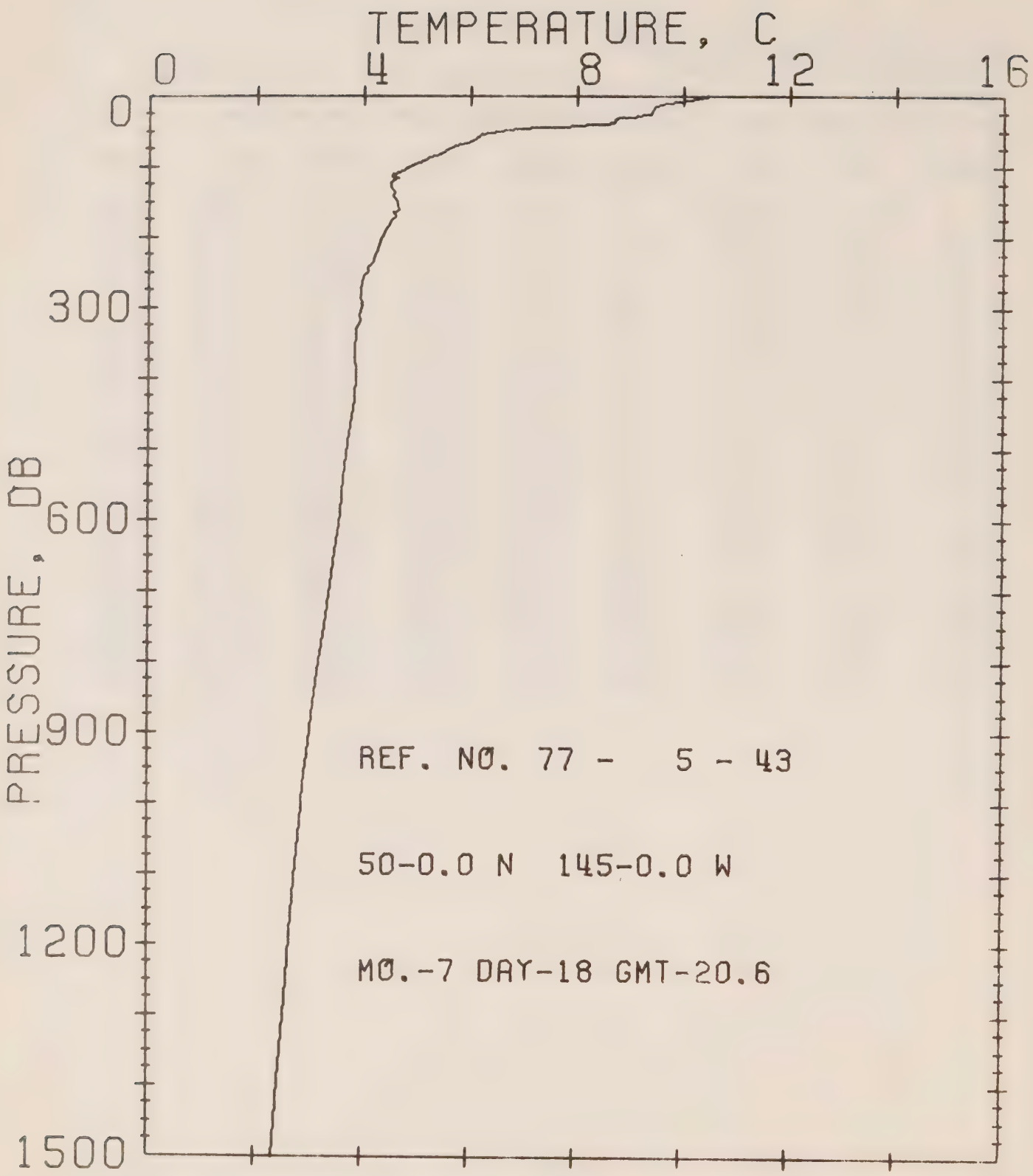
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77-5-40 DATE 16/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.5
RESULTS OF STP CAST 172 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.40	32.65	0	25.24	273.8	0.0	0.0	1485.
10	9.40	32.67	10	25.26	272.7	0.27	0.01	1485.
20	8.62	32.71	20	25.41	258.6	0.54	0.05	1483.
30	7.87	32.72	30	25.53	247.1	0.79	0.12	1480.
50	6.15	32.75	50	25.79	222.8	1.25	0.31	1474.
75	4.97	32.82	75	25.98	204.9	1.78	0.64	1469.
100	4.72	33.15	99	26.27	177.1	2.27	1.08	1469.
125	4.45	33.65	124	26.69	137.4	2.66	1.51	1469.
150	4.43	33.77	149	26.79	128.4	2.99	1.98	1469.
175	4.19	33.80	174	26.84	123.8	3.30	2.50	1469.
200	4.06	33.83	199	26.87	120.6	3.61	3.08	1469.
225	3.96	33.86	223	26.91	117.7	3.90	3.73	1469.
250	3.91	33.88	248	26.93	115.5	4.19	4.43	1469.
300	3.83	33.93	298	26.98	111.4	4.76	6.02	1470.
400	3.81	34.06	397	27.08	102.6	5.83	9.82	1471.
500	3.68	34.14	496	27.16	95.8	6.82	14.37	1473.
600	3.52	34.20	595	27.23	90.2	7.75	19.57	1474.
800	3.16	34.31	793	27.34	80.2	9.44	31.58	1475.
1000	2.89	34.38	990	27.43	72.7	10.96	45.55	1478.
1200	2.64	34.44	1188	27.50	66.6	12.36	61.20	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 41
50-0.0 N 145-0.0 W
MØ.-7 DAY-17 GMT-18.4
31
32
33
34
35
SALINITY, 0/00

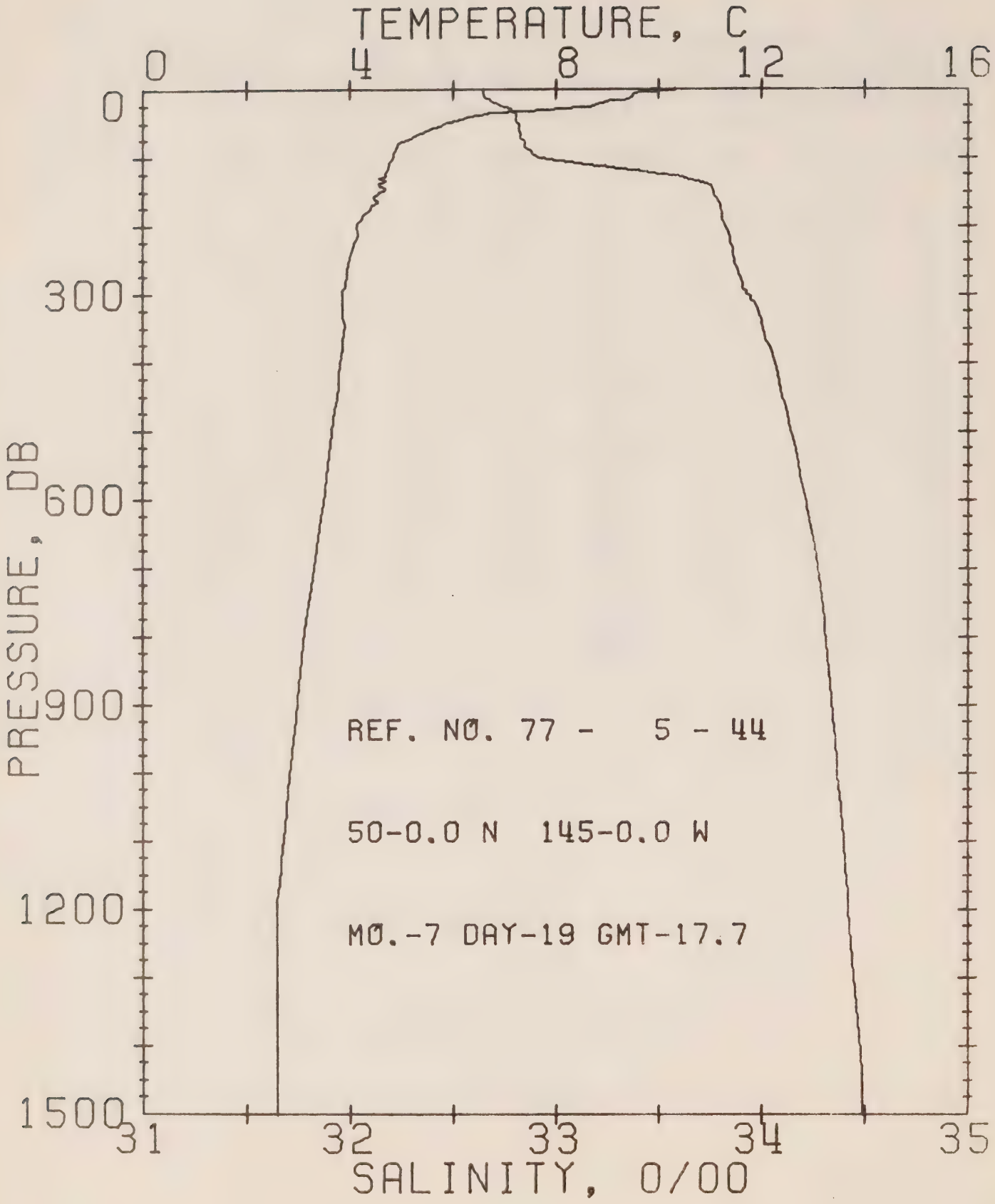
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 41 DATE 17/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 18.4
RESULTS OF STP CAST 189 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.17	32.66	0	25.12	285.1	0.0	0.0	1488.
10	9.53	32.66	10	25.23	275.4	0.28	0.01	1486.
20	9.41	32.67	20	25.25	273.2	0.55	0.06	1486.
30	8.67	32.69	30	25.39	260.3	0.82	0.12	1483.
50	6.28	32.78	50	25.79	222.1	1.31	0.32	1474.
75	5.64	32.83	75	25.91	211.1	1.85	0.66	1472.
100	5.10	32.87	99	26.00	202.4	2.37	1.12	1470.
125	4.70	33.38	124	26.45	160.3	2.84	1.66	1470.
150	4.43	33.72	149	26.75	131.8	3.20	2.17	1469.
175	4.13	33.78	174	26.83	124.8	3.52	2.69	1469.
200	3.92	33.80	199	26.87	121.1	3.82	3.28	1468.
225	3.97	33.86	223	26.91	117.3	4.12	3.93	1469.
250	3.89	33.86	248	26.92	116.7	4.41	4.63	1469.
300	3.83	33.95	298	26.99	110.0	4.98	6.22	1470.
400	3.80	34.06	397	27.08	102.2	6.04	9.99	1471.
500	3.59	34.14	496	27.16	95.6	7.03	14.52	1473.
600	3.51	34.21	595	27.23	89.8	7.95	19.70	1474.
800	3.17	34.32	793	27.35	79.3	9.63	31.67	1476.
1000	2.88	34.39	990	27.44	71.8	11.14	45.48	1478.
1200	2.61	34.45	1188	27.51	65.6	12.52	60.84	1480.
1500	2.31	34.51	1483	27.58	59.6	14.38	86.48	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 43
50-0.0 N 145-0.0 W
MO.-7 DAY-18 GMT-20.6

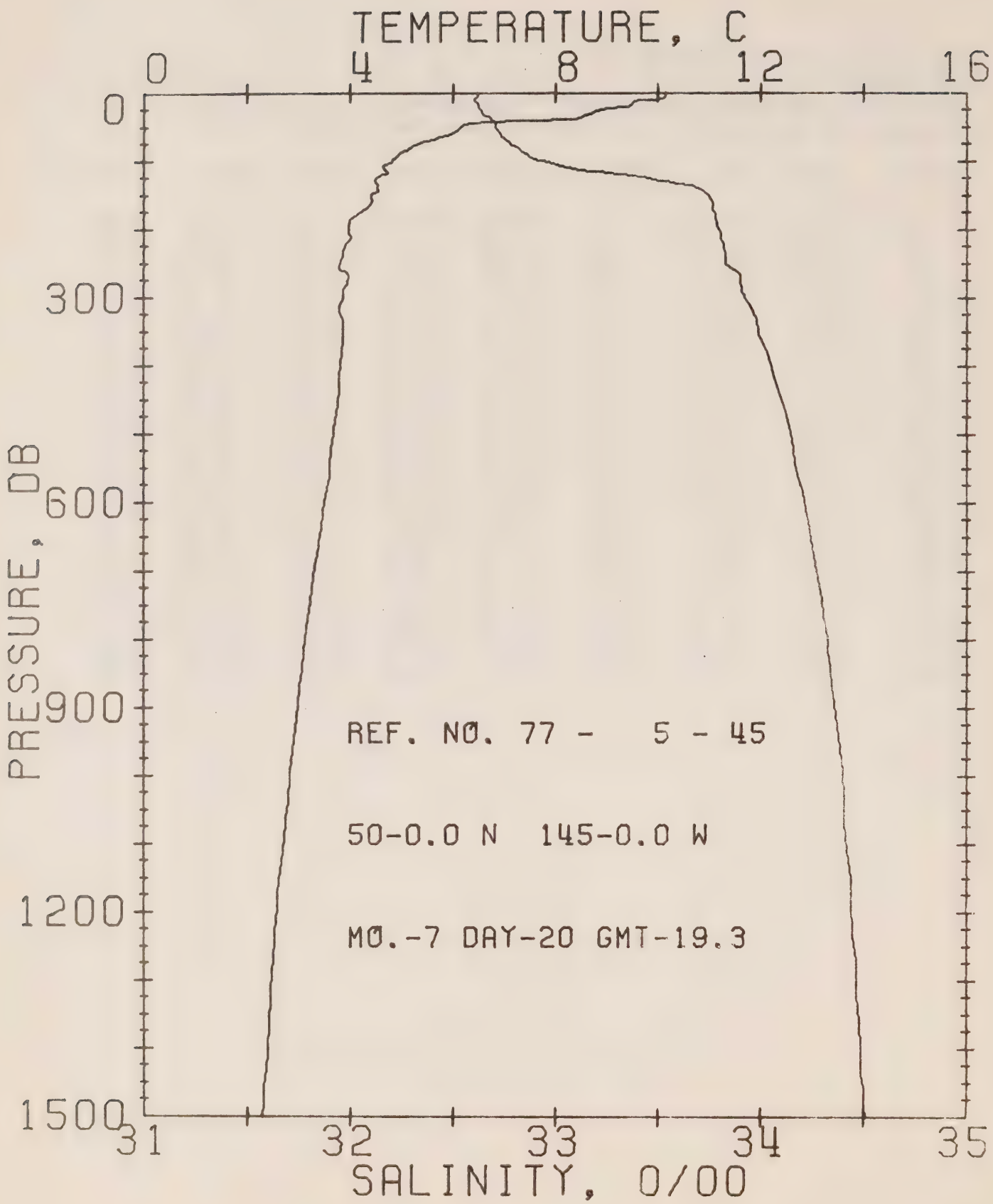
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 43 DATE 18/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 20.6
RESULTS OF STP CAST 118 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.46		0					
10	9.79		10					
20	9.44		20					
30	9.06		31					
50	6.62		51					
75	5.60		76					
100	4.86		102					
125	4.51		127					
150	4.62		153					
175	4.56		178					
200	4.37		204					
225	4.24		229					
250	4.07		255					
300	3.97		306					
400	3.86		407					
500	3.70		509					
600	3.55		611					
800	3.19		814					
1000	2.86		1017					
1200	2.63		1220					
1500	2.33		1523					


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 44
50-0.0 N 145-0.0 W
MØ.-7 DAY-19 GMT-17.7
31
32
33
34
35
SALINITY, 0/00

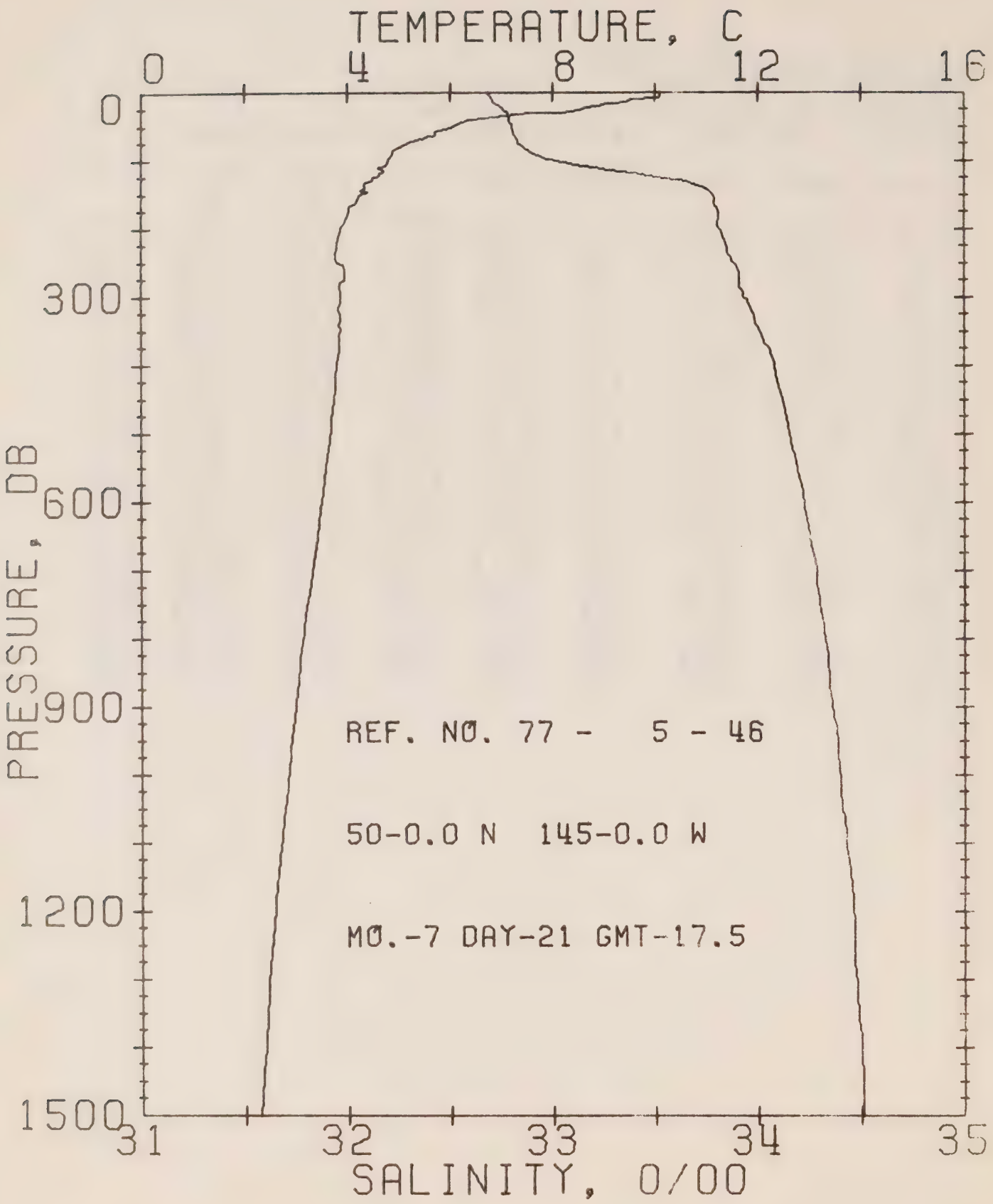
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 44 DATE 19/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.7
RESULTS OF STP CAST 152 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.31	32.65	0	25.09	288.1	0.0	0.0	1489.
10	9.49	32.66	10	25.23	275.1	0.28	0.01	1486.
20	8.89	32.70	20	25.36	262.7	0.55	0.06	1484.
30	7.83	32.79	30	25.59	241.4	0.81	0.12	1480.
50	5.82	32.82	50	25.88	213.9	1.25	0.30	1472.
75	5.04	32.84	75	25.99	203.9	1.78	0.63	1470.
100	4.84	32.92	99	26.07	196.0	2.28	1.08	1469.
125	4.70	33.54	124	26.57	148.6	2.71	1.58	1470.
150	4.60	33.76	149	26.76	130.9	3.05	2.05	1470.
175	4.36	33.80	174	26.82	125.6	3.37	2.58	1470.
200	4.14	33.82	199	26.86	122.0	3.68	3.17	1469.
225	4.09	33.85	223	26.89	119.5	3.98	3.83	1469.
250	3.99	33.87	248	26.91	117.3	4.28	4.54	1469.
300	3.86	33.93	298	26.97	111.8	4.85	6.15	1470.
400	3.82	34.07	397	27.09	102.0	5.92	9.94	1471.
500	3.66	34.14	496	27.16	95.5	6.90	14.46	1472.
600	3.50	34.21	595	27.24	89.1	7.83	19.62	1473.
800	3.11	34.31	793	27.35	79.1	9.49	31.48	1475.
1000	2.83	34.37	990	27.42	73.1	11.01	45.41	1477.
1200	2.58	34.42	1188	27.48	67.7	12.42	61.12	1480.
1500	2.58	34.49	1483	27.54	64.2	14.38	88.09	1485.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 45
50-0.0 N 145-0.0 W
MØ.-7 DAY-20 GMT-19.3
31
32
33
34
35
SALINITY, 0/00

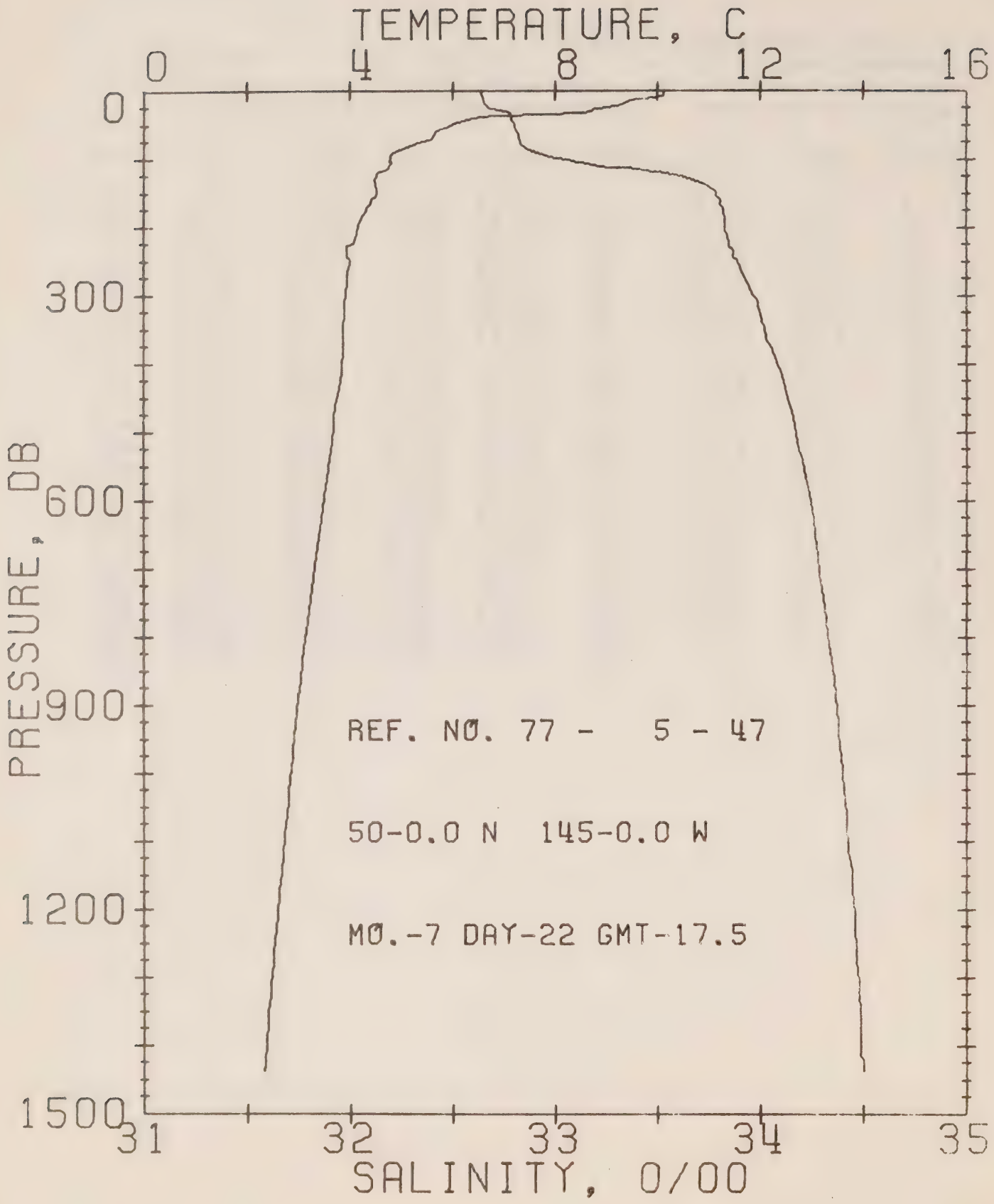
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 45 DATE 20/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 19.3
RESULTS OF STP CAST 175 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.16	32.62	0	25.09	287.9	0.0	0.0	1488.
10	9.99	32.61	10	25.11	286.3	0.29	0.01	1487.
20	9.40	32.63	20	25.23	275.9	0.57	0.06	1485.
30	8.71	32.65	30	25.35	264.4	0.83	0.13	1483.
50	6.14	32.71	50	25.75	225.9	1.32	0.32	1473.
75	5.28	32.78	75	25.91	211.0	1.87	0.67	1470.
100	4.81	32.96	99	26.11	192.7	2.38	1.13	1469.
125	4.51	33.47	124	26.54	151.5	2.82	1.63	1469.
150	4.42	33.74	149	26.77	130.1	3.17	2.11	1469.
175	4.17	33.78	174	26.82	125.4	3.49	2.64	1469.
200	3.97	33.80	199	26.86	121.8	3.79	3.23	1468.
225	3.90	33.82	223	26.88	119.9	4.10	3.88	1469.
250	3.80	33.83	248	26.90	118.3	4.39	4.60	1469.
300	3.87	33.92	298	26.97	112.6	4.97	6.21	1470.
400	3.82	34.05	397	27.08	103.0	6.04	10.03	1471.
500	3.68	34.15	496	27.17	94.9	7.03	14.56	1473.
600	3.50	34.22	595	27.24	89.1	7.96	19.74	1474.
800	3.13	34.33	793	27.36	78.0	9.62	31.59	1475.
1000	2.82	34.40	990	27.45	70.6	11.11	45.21	1477.
1200	2.57	34.44	1188	27.50	66.0	12.48	60.53	1480.
1500	2.30	34.51	1483	27.58	59.5	14.36	86.35	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 46
50-0.0 N 145-0.0 W
MO.-7 DAY-21 GMT-17.5
31
32
33
34
35
SALINITY, O/OO

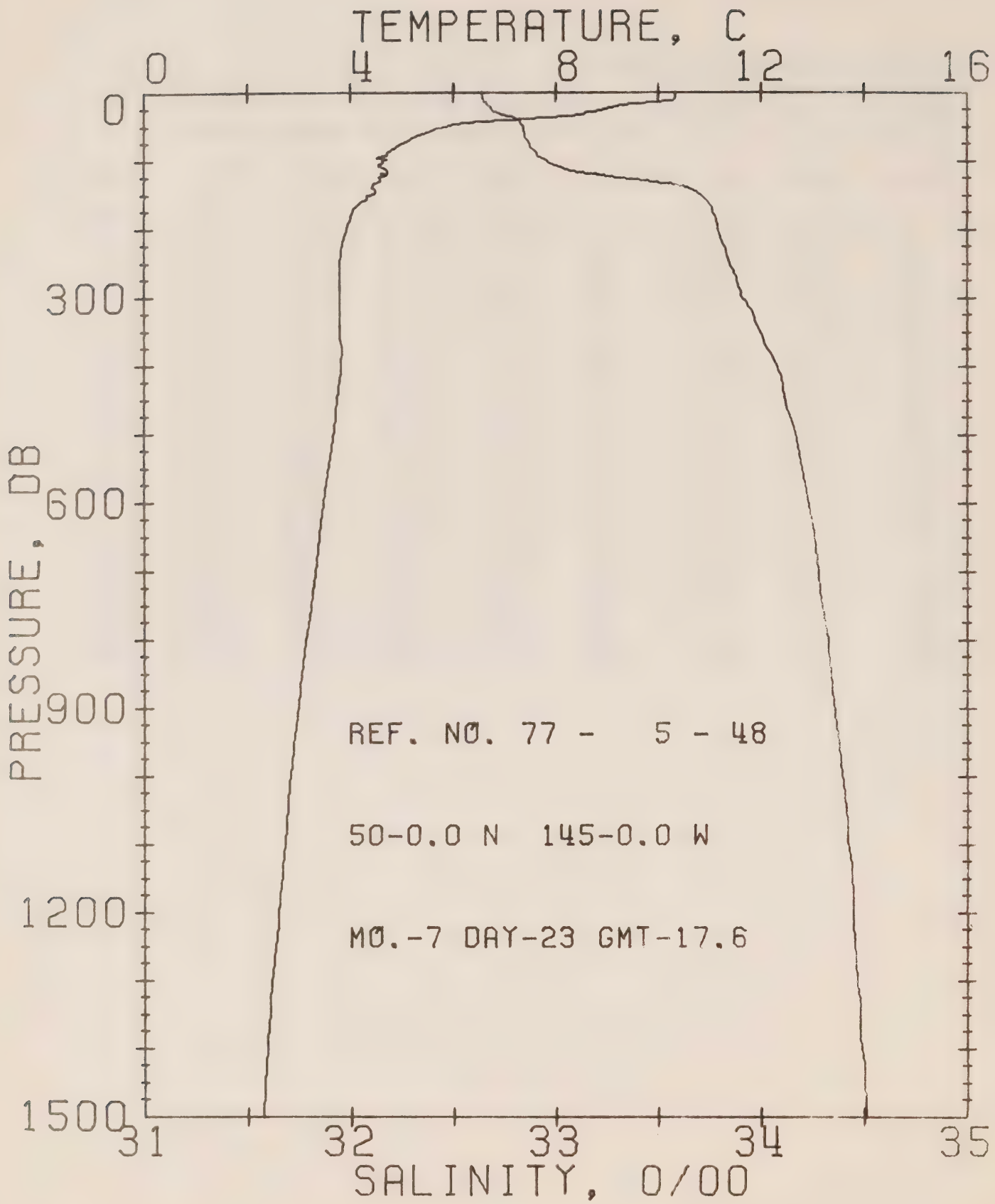
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 46 DATE 21/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.5
RESULTS OF STP CAST 175 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.11	32.69	0	25.16	281.9	0.0	0.0	1488.
10	9.82	32.70	10	25.21	277.0	0.28	0.01	1487.
20	8.91	32.73	20	25.38	260.8	0.55	0.06	1484.
30	8.18	32.78	30	25.53	246.9	0.80	0.12	1481.
50	6.04	32.80	50	25.84	217.9	1.26	0.30	1473.
75	5.16	32.83	75	25.96	206.0	1.79	0.64	1470.
100	4.79	33.00	99	26.14	189.7	2.28	1.08	1469.
125	4.50	33.54	124	26.60	146.2	2.71	1.57	1469.
150	4.27	33.78	149	26.81	126.2	3.04	2.03	1469.
175	4.00	33.81	174	26.86	121.5	3.35	2.55	1468.
200	3.86	33.81	199	26.88	119.9	3.65	3.12	1468.
225	3.79	33.84	223	26.91	117.0	3.95	3.76	1468.
250	3.82	33.88	248	26.94	114.7	4.24	4.46	1469.
300	3.88	33.93	298	26.97	112.0	4.81	6.05	1470.
400	3.78	34.08	397	27.10	100.5	5.86	9.82	1471.
500	3.65	34.16	496	27.17	94.2	6.84	14.29	1472.
600	3.49	34.23	595	27.25	88.2	7.75	19.40	1473.
800	3.12	34.32	793	27.36	78.2	9.41	31.21	1475.
1000	2.84	34.40	990	27.44	71.1	10.90	44.85	1478.
1200	2.57	34.46	1188	27.52	64.5	12.26	60.02	1480.
1500	2.30	34.51	1483	27.58	59.5	14.11	85.49	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 47
50-0.0 N 145-0.0 W
MO.-7 DAY-22 GMT-17.5
31
32
33
34
35
SALINITY, O/OO

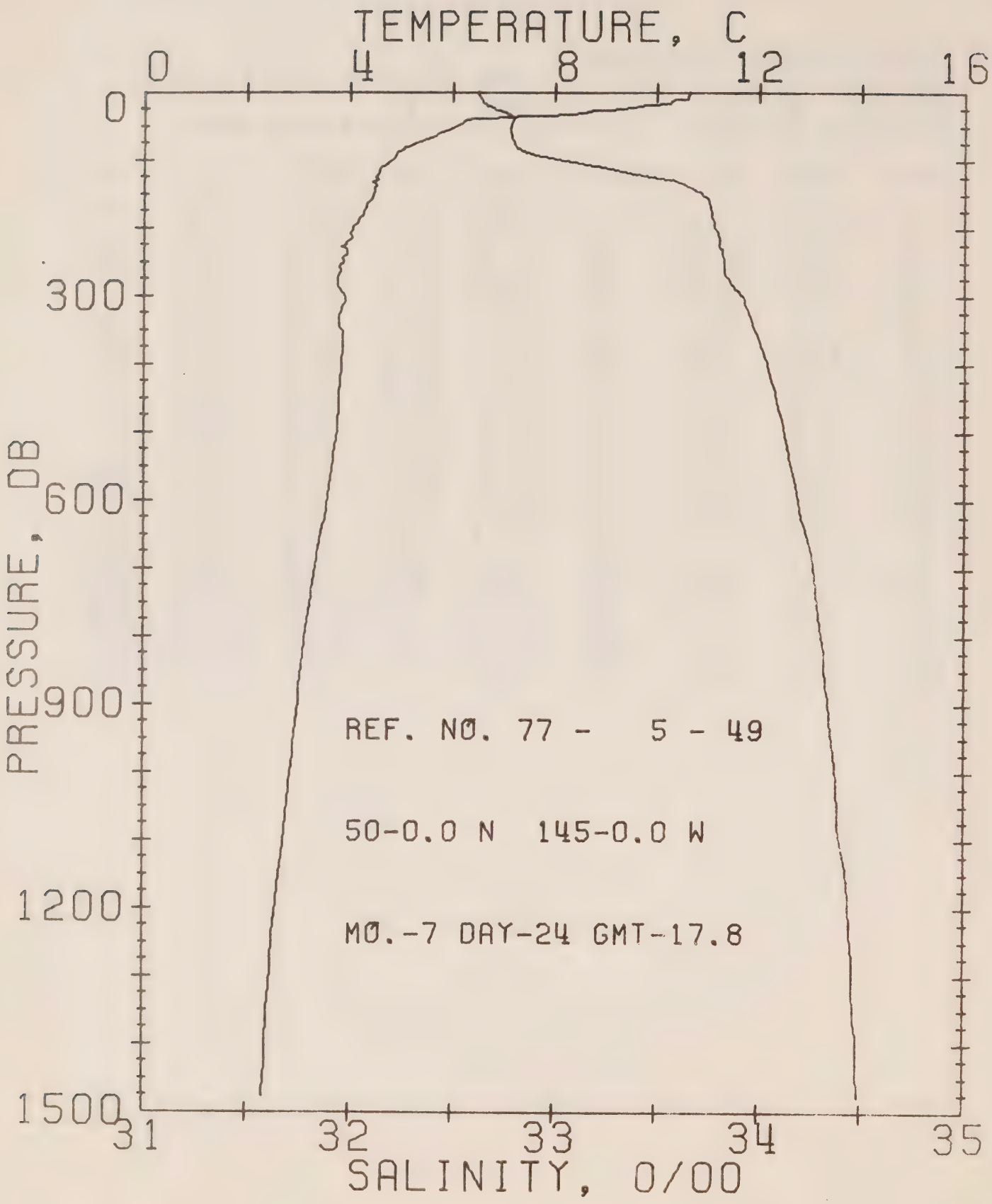
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 47 DATE 22/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.5
RESULTS OF STP CAST 158 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.13	32.64	0	25.11	285.9	0.0	0.0	1488.
10	9.95	32.65	10	25.15	282.8	0.29	0.01	1487.
20	9.32	32.66	20	25.26	272.4	0.56	0.06	1485.
30	8.69	32.74	30	25.43	256.9	0.83	0.12	1483.
50	5.97	32.80	50	25.84	217.2	1.29	0.31	1473.
75	5.41	32.83	75	25.93	209.0	1.82	0.65	1471.
100	4.78	33.04	99	26.17	186.4	2.32	1.09	1469.
125	4.52	33.61	124	26.65	140.8	2.73	1.56	1469.
150	4.53	33.79	149	26.79	128.2	3.06	2.03	1470.
175	4.31	33.82	174	26.84	123.6	3.37	2.55	1469.
200	4.15	33.83	199	26.87	121.3	3.68	3.13	1469.
225	4.02	33.85	223	26.89	118.9	3.98	3.78	1469.
250	4.00	33.89	248	26.93	116.0	4.27	4.49	1469.
300	3.92	33.97	298	27.00	109.4	4.84	6.07	1470.
400	3.85	34.08	397	27.10	101.1	5.89	9.82	1472.
500	3.66	34.17	496	27.19	93.0	6.86	14.25	1472.
600	3.49	34.24	595	27.26	86.7	7.76	19.29	1473.
800	3.13	34.33	793	27.36	78.0	9.40	30.99	1475.
1000	2.84	34.40	990	27.45	71.0	10.88	44.56	1478.
1200	2.59	34.46	1188	27.51	65.0	12.25	59.79	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 48
50-0.0 N 145-0.0 W
MØ.-7 DAY-23 GMT-17.6
31
32
33
34
35
SALINITY, 0/00

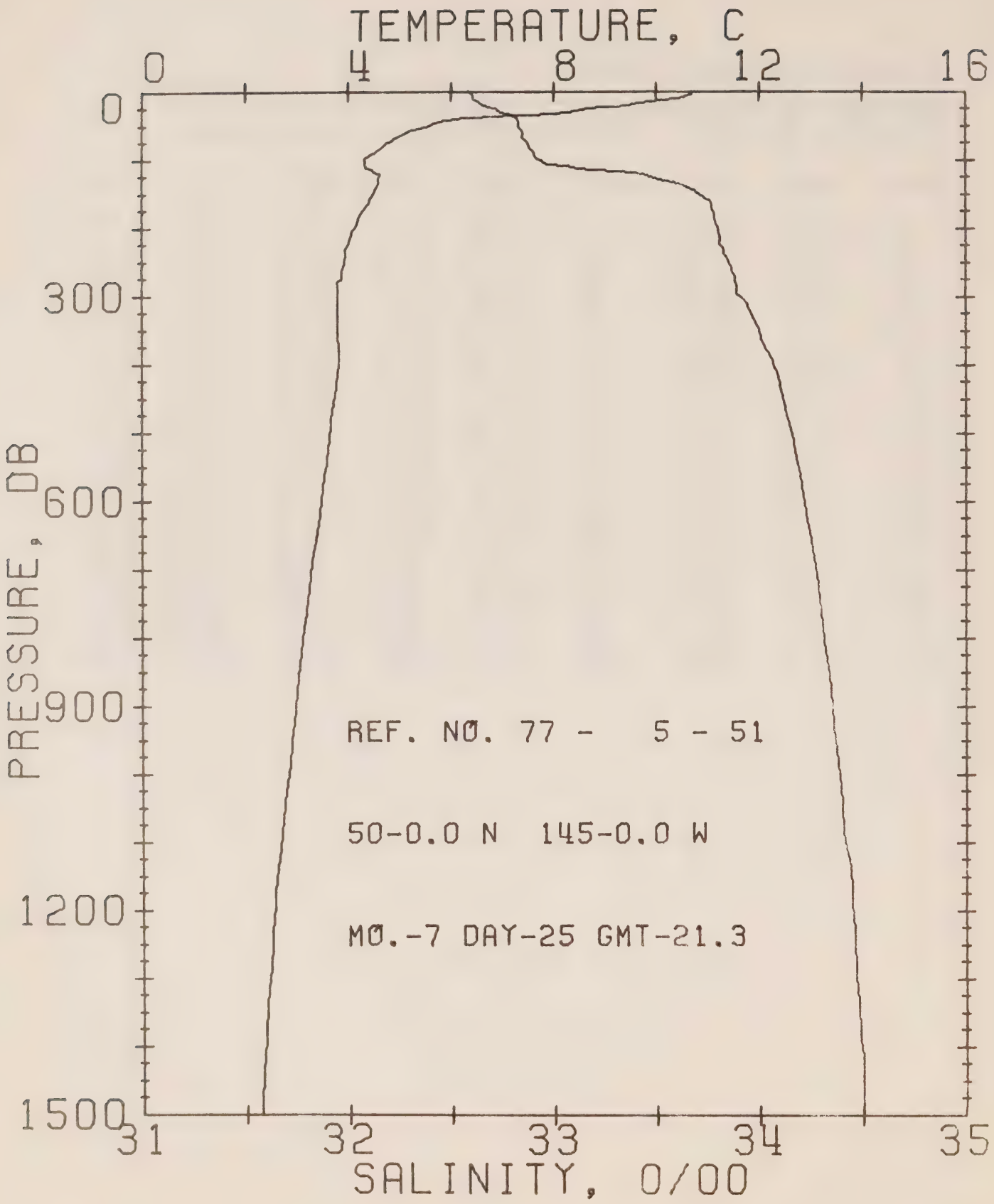
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 48 DATE 23/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.6
RESULTS OF STP CAST 151 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.35	32.64	0	25.08	289.4	0.0	0.0	1489.
10	10.33	32.65	10	25.09	288.8	0.29	0.01	1489.
20	9.17	32.68	20	25.30	268.7	0.57	0.06	1485.
30	8.58	32.72	30	25.42	257.3	0.83	0.12	1483.
50	5.87	32.84	50	25.89	213.0	1.30	0.31	1473.
75	4.99	32.87	75	26.01	201.3	1.82	0.64	1469.
100	4.65	32.95	99	26.12	191.5	2.31	1.08	1468.
125	4.58	33.33	124	26.42	163.0	2.76	1.60	1469.
150	4.41	33.71	149	26.74	132.6	3.12	2.10	1469.
175	4.03	33.76	174	26.83	124.8	3.44	2.63	1468.
200	3.91	33.79	199	26.86	122.0	3.75	3.21	1468.
225	3.83	33.82	223	26.89	119.1	4.05	3.87	1468.
250	3.79	33.84	248	26.91	117.2	4.34	4.58	1468.
300	3.79	33.91	298	26.97	112.6	4.92	6.19	1469.
400	3.82	34.08	397	27.10	100.9	5.98	9.98	1471.
500	3.66	34.17	496	27.18	93.5	6.95	14.44	1472.
600	3.47	34.23	595	27.25	87.5	7.86	19.50	1473.
800	3.13	34.33	793	27.36	78.1	9.52	31.30	1475.
1000	2.83	34.40	990	27.44	71.1	11.01	44.97	1477.
1200	2.60	34.45	1188	27.51	65.7	12.37	60.24	1480.
1500	2.28	34.51	1483	27.58	59.2	14.24	85.93	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 49
50-0.0 N 145-0.0 W
MØ.-7 DAY-24 GMT-17.8
31
32
33
34
35
SALINITY, O/OO

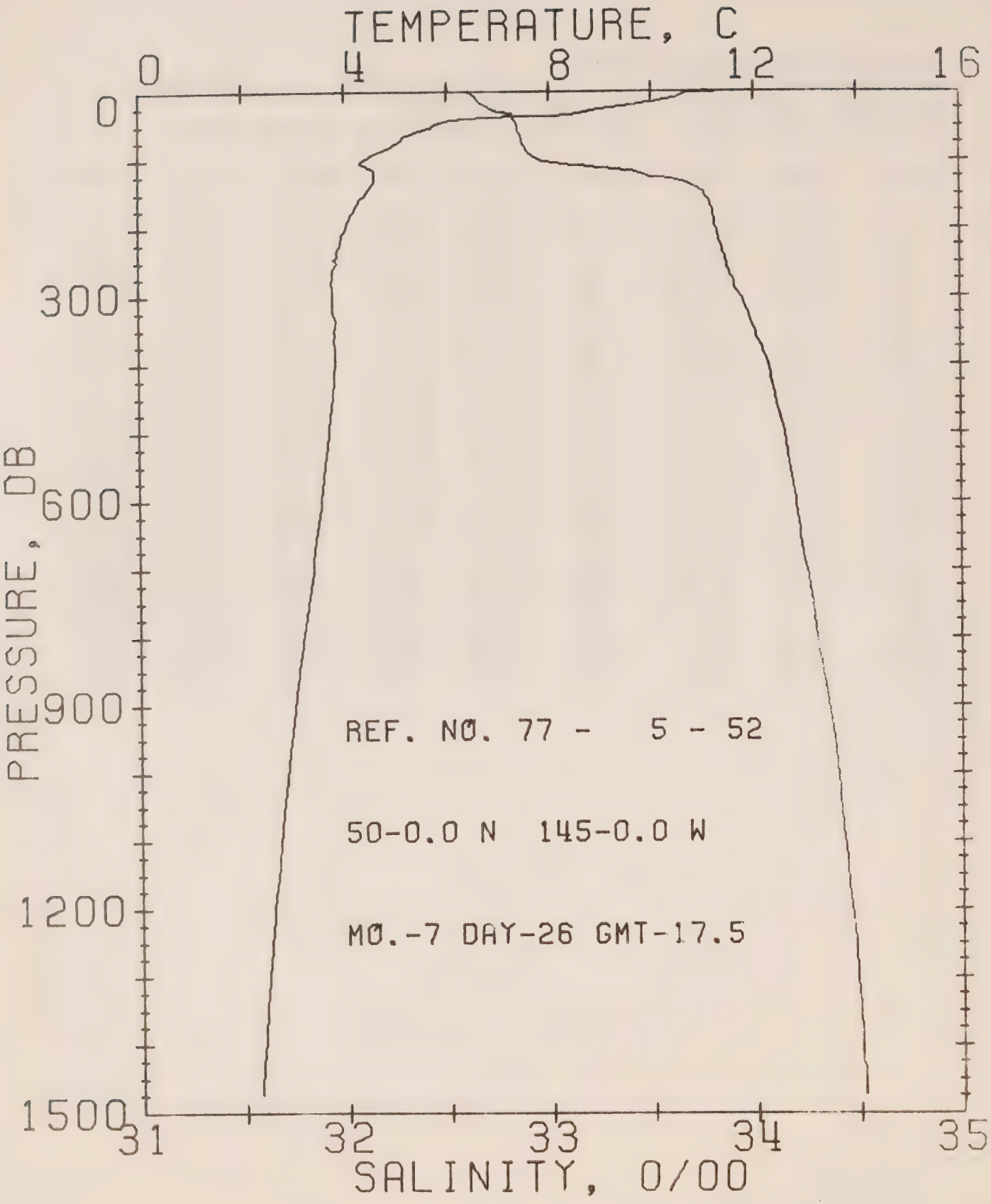
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 49 DATE 24/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.8
RESULTS OF STP CAST 179 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.65	32.63	0	25.02	295.1	0.0	0.0	1490.
10	10.60	32.64	10	25.03	293.9	0.29	0.02	1490.
20	9.62	32.68	20	25.23	275.5	0.58	0.06	1486.
30	9.55	32.76	30	25.46	253.8	0.85	0.13	1483.
50	6.02	32.79	50	25.83	218.5	1.30	0.31	1473.
75	5.25	32.80	75	25.93	209.2	1.84	0.65	1470.
100	4.82	33.03	99	26.16	187.6	2.34	1.10	1469.
125	4.52	33.51	124	26.57	148.6	2.76	1.58	1469.
150	4.45	33.72	149	26.75	132.4	3.11	2.06	1469.
175	4.27	33.77	174	26.80	127.1	3.43	2.60	1469.
200	4.05	33.79	199	26.84	123.6	3.75	3.20	1469.
225	3.88	33.81	223	26.88	120.4	4.05	3.86	1468.
250	3.87	33.83	248	26.89	119.0	4.35	4.59	1469.
300	3.91	33.92	298	26.96	113.0	4.93	6.22	1470.
400	3.83	34.04	397	27.07	104.1	6.02	10.08	1471.
500	3.74	34.12	496	27.14	97.6	7.02	14.69	1473.
600	3.56	34.20	595	27.22	91.1	7.97	19.97	1474.
800	3.14	34.31	793	27.34	79.8	9.66	32.02	1475.
1000	2.86	34.38	990	27.42	72.9	11.19	45.99	1478.
1200	2.58	34.44	1188	27.50	66.1	12.58	61.61	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 51
50-0.0 N 145-0.0 W
MO.-7 DAY-25 GMT-21.3
31
32
33
34
35
SALINITY, O/OO

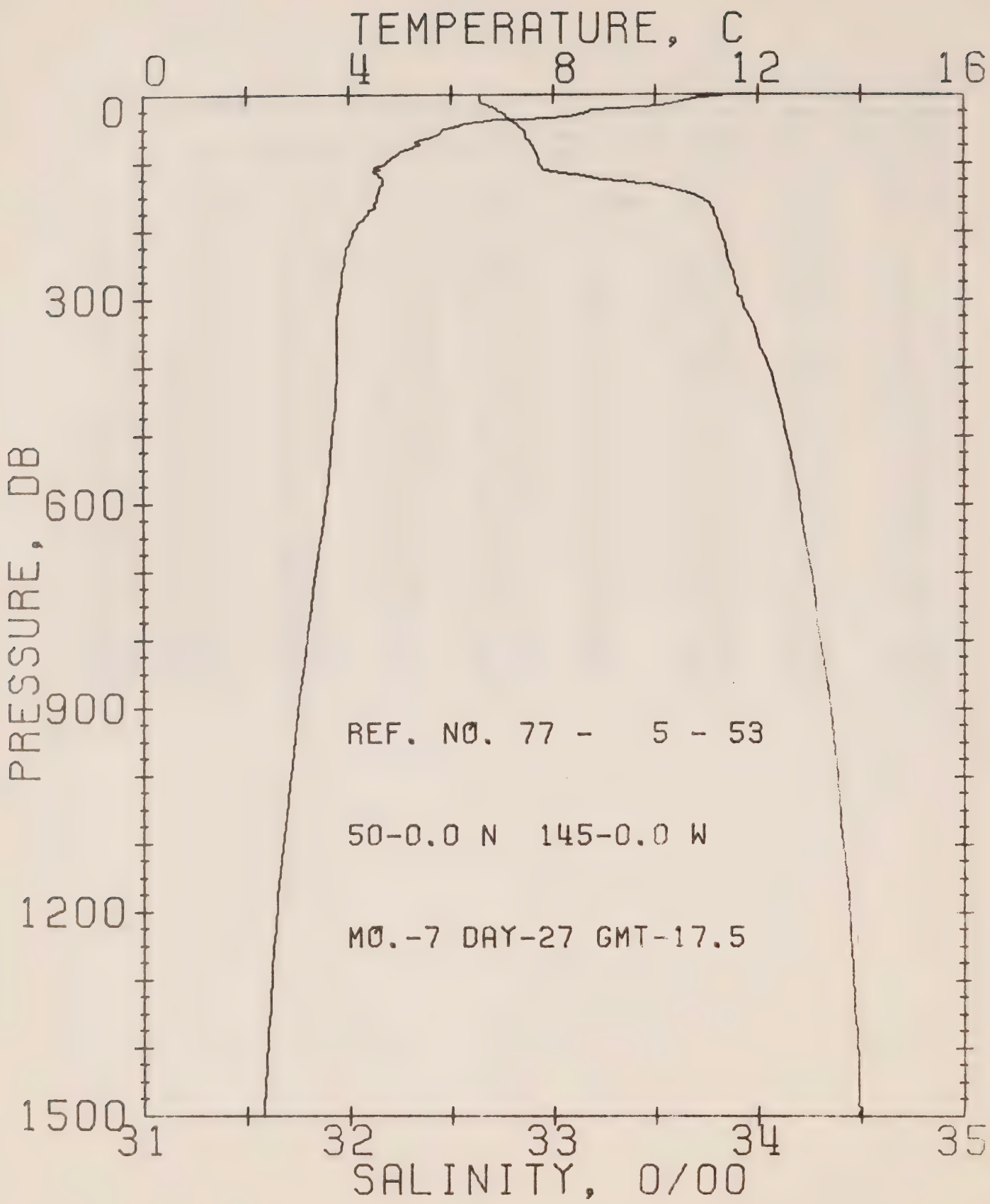
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 51 DATE 25/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 21.3
RESULTS OF STP CAST 157 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.69	32.59	0	24.98	298.7	0.0	0.0	1490.
10	10.46	32.61	10	25.03	293.9	0.30	0.02	1489.
20	9.48	32.66	20	25.24	274.6	0.58	0.06	1486.
30	8.22	32.75	30	25.50	249.8	0.84	0.12	1481.
50	5.55	32.83	50	25.92	210.1	1.29	0.30	1471.
75	4.79	32.86	75	26.03	199.5	1.80	0.63	1469.
100	4.32	32.93	99	26.13	190.1	2.29	1.06	1467.
125	4.60	33.48	124	26.54	151.9	2.72	1.56	1469.
150	4.48	33.70	149	26.73	133.7	3.07	2.05	1470.
175	4.28	33.77	174	26.81	126.8	3.39	2.59	1469.
200	4.12	33.80	199	26.84	123.4	3.71	3.18	1469.
225	3.97	33.81	223	26.87	121.1	4.01	3.84	1469.
250	3.91	33.85	248	26.91	117.7	4.31	4.57	1469.
300	3.78	33.91	298	26.97	112.5	4.89	6.18	1469.
400	3.81	34.07	397	27.09	101.3	5.95	9.97	1471.
500	3.63	34.16	496	27.18	93.9	6.93	14.43	1472.
600	3.46	34.22	595	27.25	88.2	7.84	19.53	1473.
800	3.10	34.31	793	27.35	78.8	9.50	31.35	1475.
1000	2.82	34.39	990	27.44	71.8	11.00	45.11	1477.
1200	2.54	34.45	1188	27.51	64.9	12.36	60.37	1480.
1500	2.28	34.50	1483	27.57	60.0	14.23	85.95	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 52
50-0.0 N 145-0.0 W
MO.-7 DAY-26 GMT-17.5
31
32
33
34
35
SALINITY, O/OO

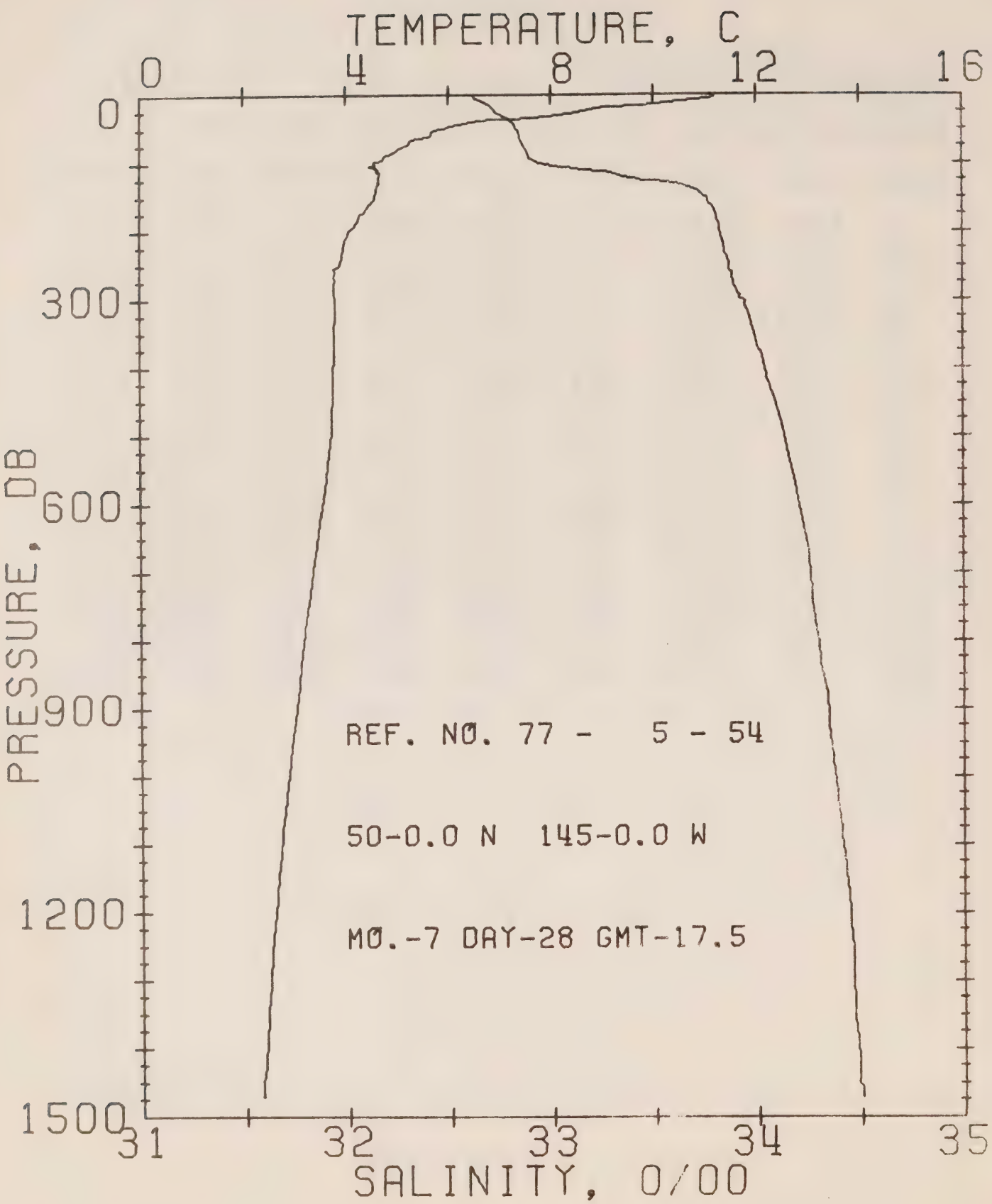
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 52 DATE 26/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.5
RESULTS OF STP CAST 165 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.02	32.61	0	24.94	302.8	0.0	0.0	1491.
10	10.45	32.64	10	25.06	291.5	0.30	0.02	1489.
20	9.68	32.68	20	25.22	276.2	0.58	0.06	1487.
30	8.75	32.76	30	25.43	256.9	0.85	0.13	1483.
50	5.75	32.84	50	25.90	211.7	1.30	0.31	1472.
75	5.04	32.87	75	26.01	201.7	1.82	0.64	1470.
100	4.39	32.95	99	26.15	188.8	2.31	1.08	1467.
125	4.60	33.49	124	26.55	151.0	2.73	1.56	1469.
150	4.40	33.75	149	26.78	129.3	3.07	2.03	1469.
175	4.17	33.80	174	26.84	123.6	3.39	2.55	1469.
200	4.01	33.81	199	26.87	121.3	3.69	3.14	1469.
225	3.90	33.83	223	26.89	118.7	3.99	3.79	1469.
250	3.84	33.86	248	26.92	116.4	4.29	4.50	1469.
300	3.75	33.93	298	26.99	110.7	4.85	6.09	1469.
400	3.81	34.07	397	27.09	101.9	5.92	9.87	1471.
500	3.68	34.15	496	27.17	95.2	6.90	14.40	1473.
600	3.52	34.20	595	27.22	90.4	7.83	19.59	1474.
800	3.16	34.30	793	27.34	80.6	9.54	31.76	1475.
1000	2.85	34.40	990	27.44	71.1	11.05	45.56	1478.
1200	2.56	34.46	1188	27.52	64.4	12.41	60.76	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 53
50-0.0 N 145-0.0 W
MØ.-7 DAY-27 GMT-17.5
31
32
33
34
35
SALINITY, 0/00

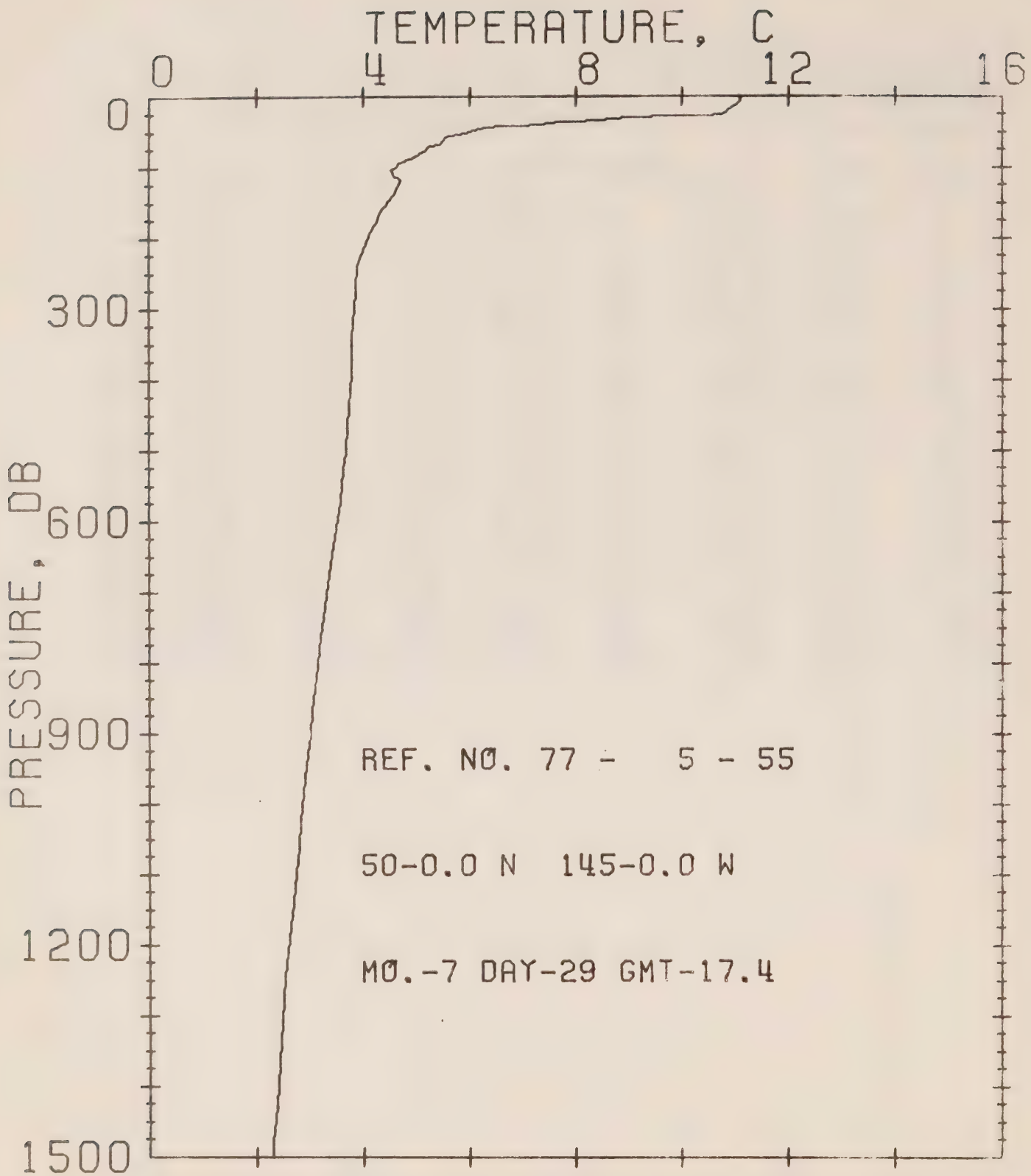
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 53 DATE 27/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.5
RESULTS OF STP CAST 149 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.01	32.64	0	24.96	300.3	0.0	0.0	1491.
10	10.54	32.64	10	25.05	292.7	0.30	0.02	1490.
20	9.51	32.71	20	25.27	271.7	0.58	0.06	1486.
30	8.46	32.76	30	25.48	252.2	0.84	0.12	1482.
50	5.90	32.85	50	25.89	212.9	1.30	0.31	1473.
75	5.27	32.90	75	26.01	201.9	1.82	0.64	1471.
100	4.74	32.93	99	26.09	194.2	2.31	1.08	1469.
125	4.66	33.27	124	26.36	168.3	2.77	1.61	1469.
150	4.56	33.71	149	26.73	134.1	3.14	2.12	1470.
175	4.37	33.79	174	26.81	126.4	3.47	2.66	1470.
200	4.10	33.82	199	26.86	121.9	3.78	3.25	1469.
225	3.96	33.84	223	26.89	118.8	4.08	3.90	1469.
250	3.90	33.86	248	26.92	116.7	4.37	4.62	1469.
300	3.81	33.92	298	26.97	112.0	4.94	6.22	1469.
400	3.75	34.06	397	27.09	102.1	6.01	10.02	1471.
500	3.67	34.14	496	27.16	95.8	7.00	14.55	1472.
600	3.53	34.20	595	27.23	90.2	7.93	19.75	1474.
800	3.17	34.30	793	27.34	80.4	9.63	31.84	1475.
1000	2.85	34.39	990	27.44	71.9	11.14	45.69	1478.
1200	2.58	34.44	1188	27.50	65.9	12.52	61.15	1480.
1500	2.31	34.49	1484	27.56	61.1	14.42	87.14	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 54
50-0.0 N 145-0.0 W
MO.-7 DAY-28 GMT-17.5
31
32
33
34
35
SALINITY, O/OO

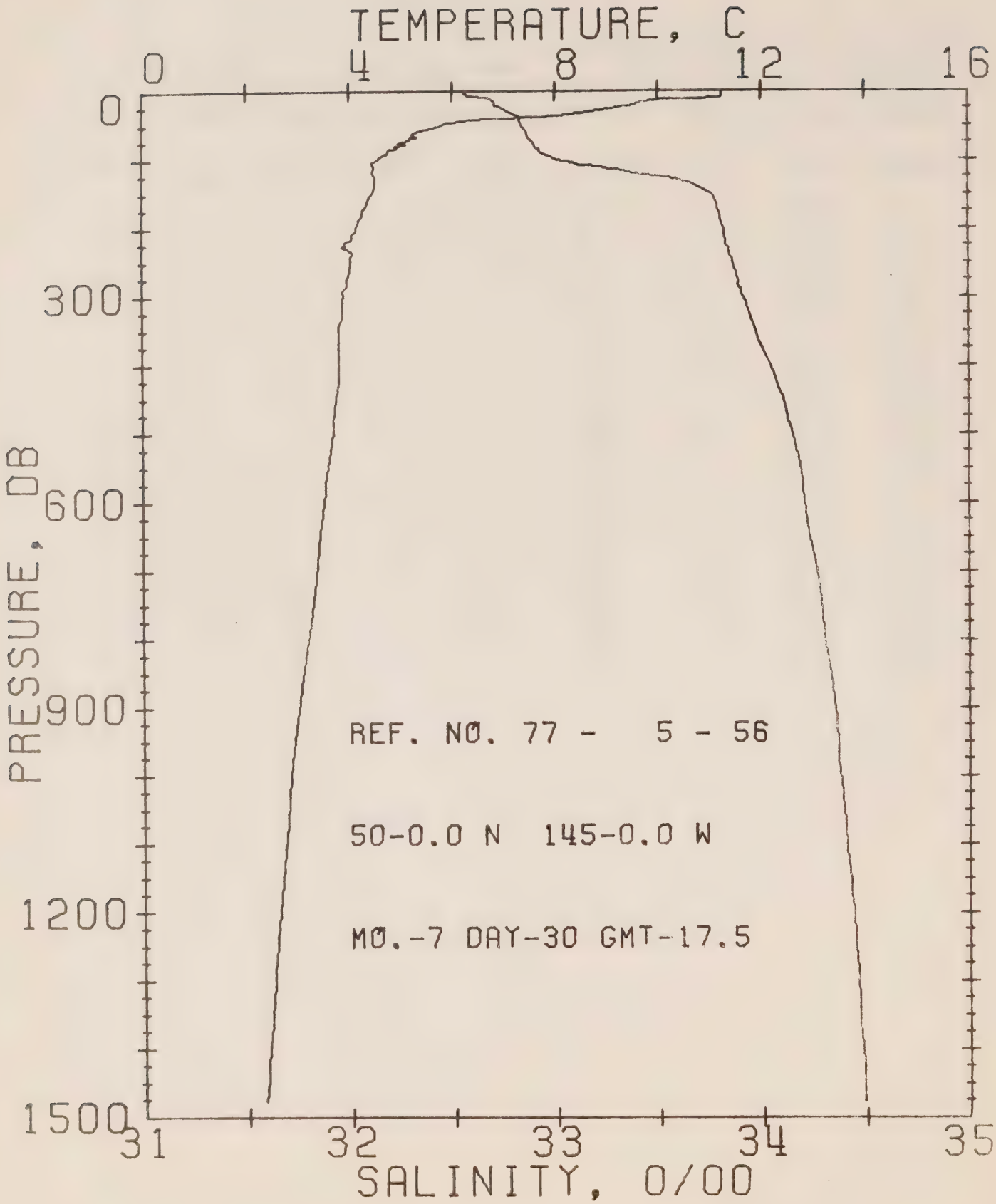
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 54 DATE 28/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.5
RESULTS OF STP CAST 157 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.12	32.62	0	24.93	303.7	0.0	0.0	1491.
10	10.63	32.66	10	25.04	292.9	0.30	0.02	1490.
20	8.94	32.71	20	25.36	262.8	0.58	0.06	1484.
30	8.20	32.75	30	25.51	249.2	0.84	0.12	1481.
50	5.91	32.83	50	25.88	214.2	1.29	0.31	1473.
75	5.16	32.86	75	25.99	203.5	1.81	0.64	1470.
100	4.54	32.94	99	26.12	191.4	2.31	1.08	1468.
125	4.64	33.44	124	26.50	155.1	2.74	1.57	1469.
150	4.56	33.75	149	26.76	131.4	3.08	2.06	1470.
175	4.29	33.80	174	26.83	125.0	3.40	2.59	1469.
200	4.06	33.82	199	26.87	121.2	3.71	3.17	1469.
225	3.93	33.84	223	26.90	118.5	4.01	3.82	1469.
250	3.88	33.87	248	26.92	116.1	4.30	4.53	1469.
300	3.78	33.92	298	26.98	111.3	4.87	6.12	1469.
400	3.75	34.04	397	27.07	103.2	5.94	9.93	1471.
500	3.69	34.13	496	27.15	96.3	6.94	14.50	1473.
600	3.53	34.21	595	27.23	90.0	7.87	19.72	1474.
800	3.15	34.30	793	27.34	80.6	9.57	31.81	1475.
1000	2.85	34.38	990	27.43	72.6	11.10	45.81	1478.
1200	2.58	34.45	1188	27.51	65.6	12.48	61.24	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 55
50-0.0 N 145-0.0 W
MO.-7 DAY-29 GMT-17.4

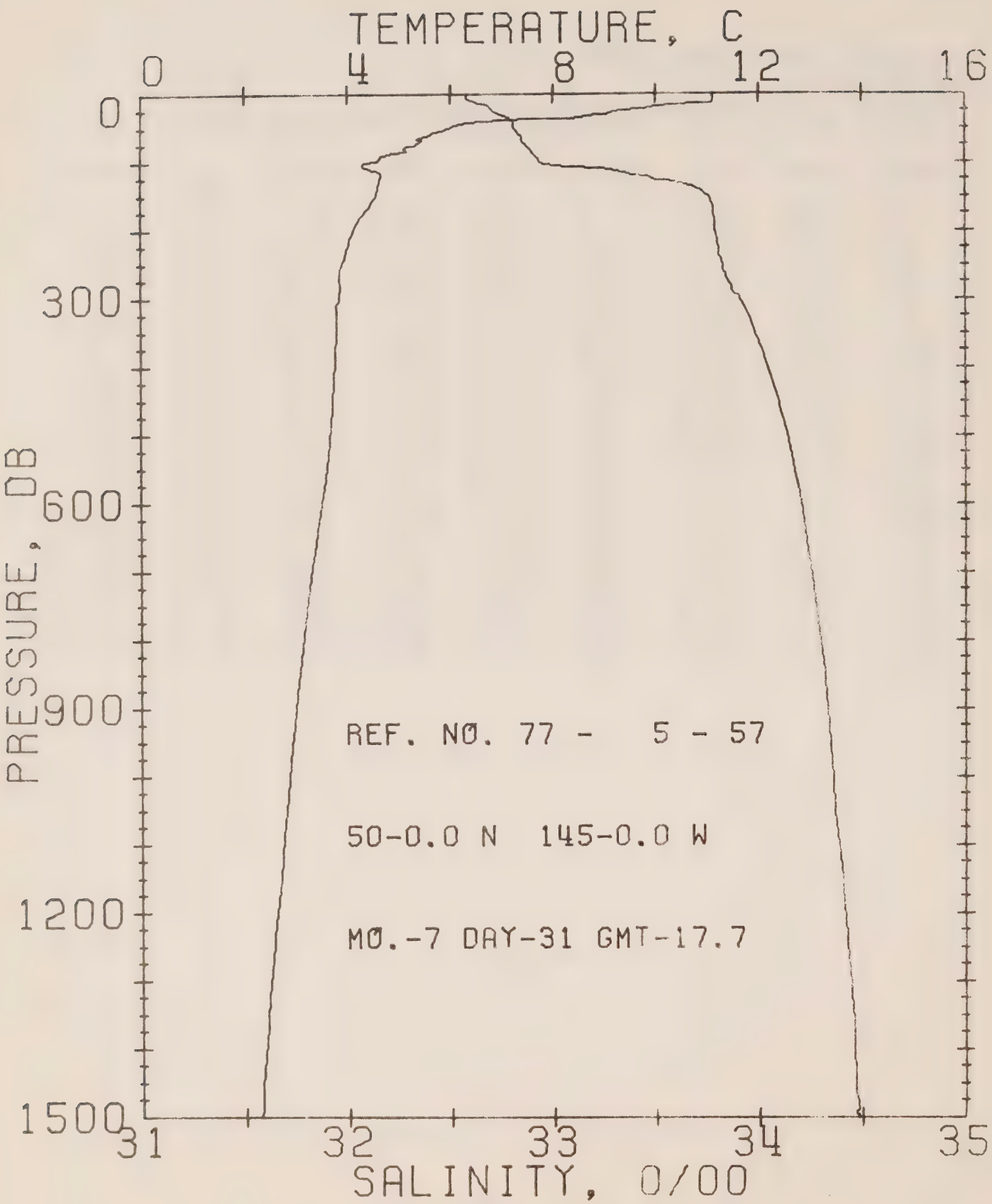
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 55 DATE 29/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.4
RESULTS OF STP CAST 109 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	11.07		0					
10	11.07		10					
20	10.90		20					
30	9.28		31					
50	6.00		51					
75	5.20		76					
100	4.63		102					
125	4.66		127					
150	4.46		153					
175	4.28		178					
200	4.09		204					
225	3.96		229					
250	3.89		255					
300	3.83		306					
400	3.78		407					
500	3.67		509					
600	3.51		611					
800	3.15		814					
1000	2.87		1017					
1200	2.61		1220					
1500	2.29		1523					


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 56
50-0.0 N 145-0.0 W
MØ.-7 DAY-30 GMT-17.5
31
32
33
34
35
SALINITY, 0/00

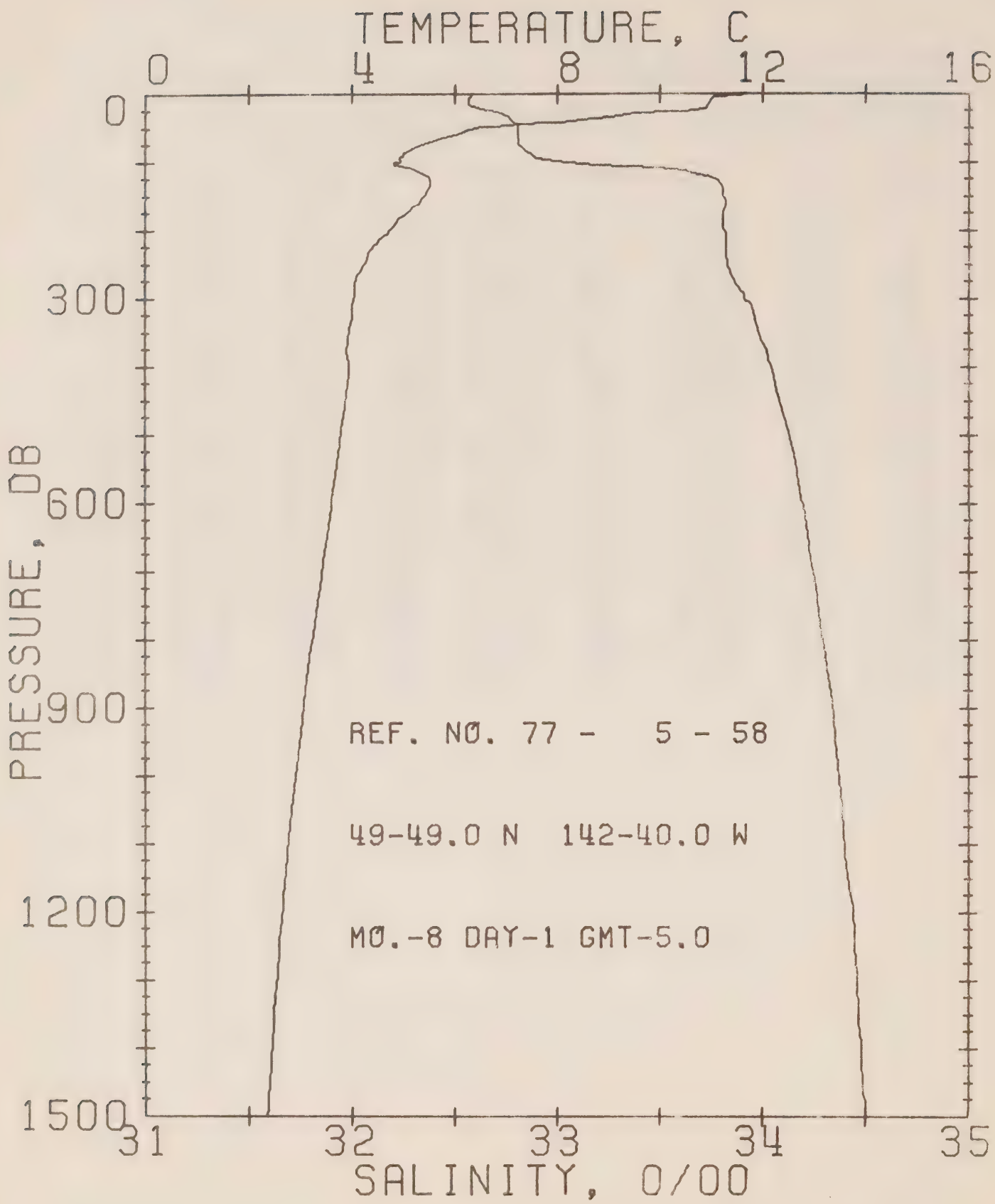
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 56 DATE 30/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.5
RESULTS OF STP CAST 155 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.25	32.56	0	24.86	310.3	0.0	0.0	1492.
10	11.23	32.65	10	24.93	304.0	0.31	0.02	1492.
20	9.51	32.71	20	25.27	271.6	0.59	0.06	1486.
30	8.71	32.77	30	25.44	255.3	0.86	0.13	1483.
50	5.76	32.84	50	25.90	212.0	1.32	0.31	1472.
75	5.03	32.89	75	26.02	200.3	1.83	0.64	1470.
100	4.55	33.01	99	26.17	186.2	2.32	1.07	1468.
125	4.52	33.51	124	26.57	148.4	2.74	1.55	1469.
150	4.42	33.76	149	26.78	129.0	3.08	2.03	1469.
175	4.27	33.79	174	26.82	125.2	3.40	2.56	1469.
200	4.13	33.82	199	26.86	122.2	3.71	3.15	1469.
225	3.94	33.83	223	26.89	119.4	4.01	3.80	1469.
250	4.02	33.86	248	26.90	118.3	4.31	4.52	1469.
300	3.89	33.91	298	26.96	113.5	4.89	6.15	1470.
400	3.79	34.04	397	27.07	103.5	5.98	10.02	1471.
500	3.66	34.15	496	27.17	94.6	6.97	14.55	1472.
600	3.48	34.21	595	27.23	89.5	7.88	19.68	1473.
800	3.17	34.30	793	27.34	80.3	9.57	31.72	1475.
1000	2.83	34.38	990	27.43	72.4	11.09	45.59	1477.
1200	2.62	34.44	1188	27.50	66.6	12.48	61.17	1480.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 57
50-0.0 N 145-0.0 W
MØ.-7 DAY-31 GMT-17.7
31
32
33
34
35
SALINITY, 0/00

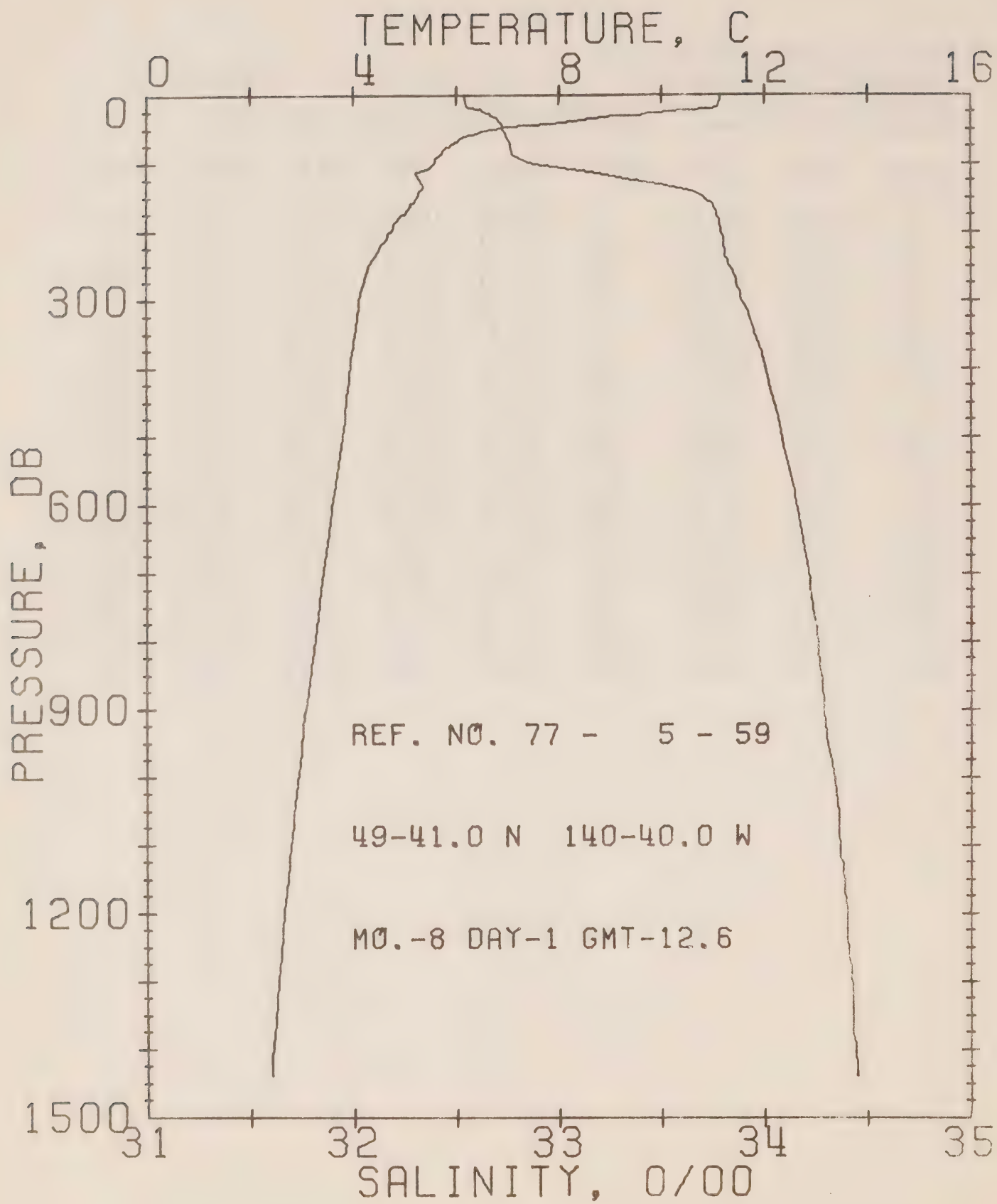
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 57 DATE 31/ 7/77 STATION P
POSITION 50- 0.0N, 145- 0.0W GMT 17.7
RESULTS OF STP CAST 137 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.11	32.58	0	24.90	306.5	0.0	0.0	1491.
10	11.11	32.60	10	24.91	305.2	0.31	0.02	1491.
20	9.91	32.69	20	25.19	279.1	0.60	0.06	1487.
30	9.00	32.74	30	25.37	261.9	0.87	0.13	1484.
50	5.95	32.81	50	25.86	216.2	1.34	0.32	1473.
75	5.24	32.87	75	25.99	203.9	1.86	0.65	1470.
100	4.35	32.94	99	26.14	189.4	2.35	1.09	1467.
125	4.62	33.50	124	26.55	150.4	2.77	1.57	1469.
150	4.53	33.76	149	26.77	130.2	3.11	2.05	1470.
175	4.29	33.78	174	26.81	126.4	3.43	2.58	1469.
200	4.10	33.79	199	26.84	123.9	3.75	3.17	1469.
225	3.99	33.81	223	26.86	121.7	4.05	3.84	1469.
250	3.88	33.82	248	26.89	119.5	4.35	4.57	1469.
300	3.84	33.91	298	26.96	113.1	4.94	6.21	1470.
400	3.75	34.04	397	27.08	102.9	6.02	10.04	1471.
500	3.67	34.14	496	27.16	95.3	7.01	14.58	1472.
600	3.49	34.21	595	27.23	89.5	7.93	19.76	1473.
800	3.14	34.30	793	27.34	80.2	9.63	31.82	1475.
1000	2.86	34.36	990	27.41	74.2	11.17	45.92	1478.
1200	2.62	34.42	1188	27.48	68.2	12.59	61.89	1480.
1500	2.29	34.48	1484	27.56	61.6	14.53	88.47	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 58
49-49.0 N 142-40.0 W
MØ.-8 DAY-1 GMT-5.0
31
32
33
34
35
SALINITY, 0/00

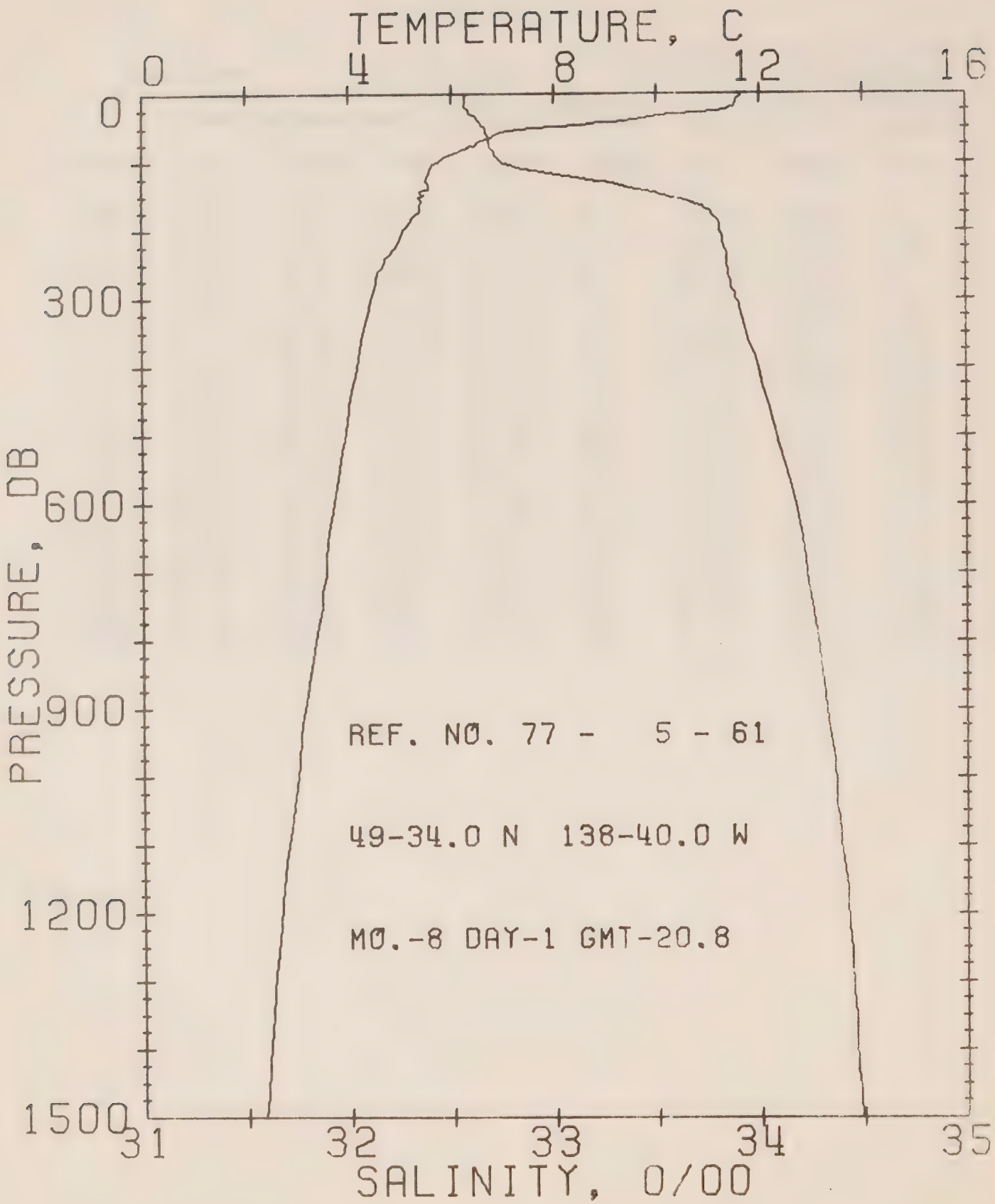
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 58 DATE 1/ 8/77 STATION 12
POSITION 49-49.0N, 142-40.0W GMT 5.0
RESULTS OF STP CAST 145 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.67	32.59	0	24.80	315.3	0.0	0.0	1493.
10	10.98	32.57	10	24.91	305.5	0.31	0.02	1491.
20	10.90	32.60	20	24.95	302.1	0.61	0.06	1491.
30	9.39	32.73	30	25.31	268.4	0.90	0.14	1486.
50	6.45	32.81	50	25.79	222.2	1.40	0.33	1475.
75	5.33	32.81	75	25.93	209.1	1.93	0.68	1471.
100	4.89	33.05	99	26.17	186.8	2.44	1.13	1470.
125	5.49	33.76	124	26.66	140.4	2.83	1.57	1473.
150	5.39	33.81	149	26.71	135.9	3.17	2.05	1473.
175	5.05	33.81	174	26.75	132.4	3.51	2.60	1472.
200	4.73	33.81	199	26.79	128.8	3.83	3.23	1472.
225	4.41	33.82	223	26.83	125.1	4.15	3.91	1471.
250	4.22	33.83	248	26.86	122.6	4.46	4.66	1470.
300	4.03	33.91	298	26.94	115.0	5.05	6.33	1470.
400	3.95	34.04	397	27.05	105.2	6.15	10.22	1472.
500	3.77	34.13	496	27.14	97.5	7.16	14.87	1473.
600	3.60	34.20	595	27.21	91.5	8.11	20.16	1474.
800	3.23	34.29	793	27.33	81.7	9.84	32.46	1476.
1000	2.91	34.37	990	27.42	73.5	11.38	46.62	1478.
1200	2.65	34.44	1188	27.50	66.9	12.79	62.41	1480.
1500	2.35	34.50	1484	27.57	60.8	14.71	88.72	1484.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 59
49-41.0 N 140-40.0 W
MO.-8 DAY-1 GMT-12.6
31
32
33
34
35
SALINITY, O/OO

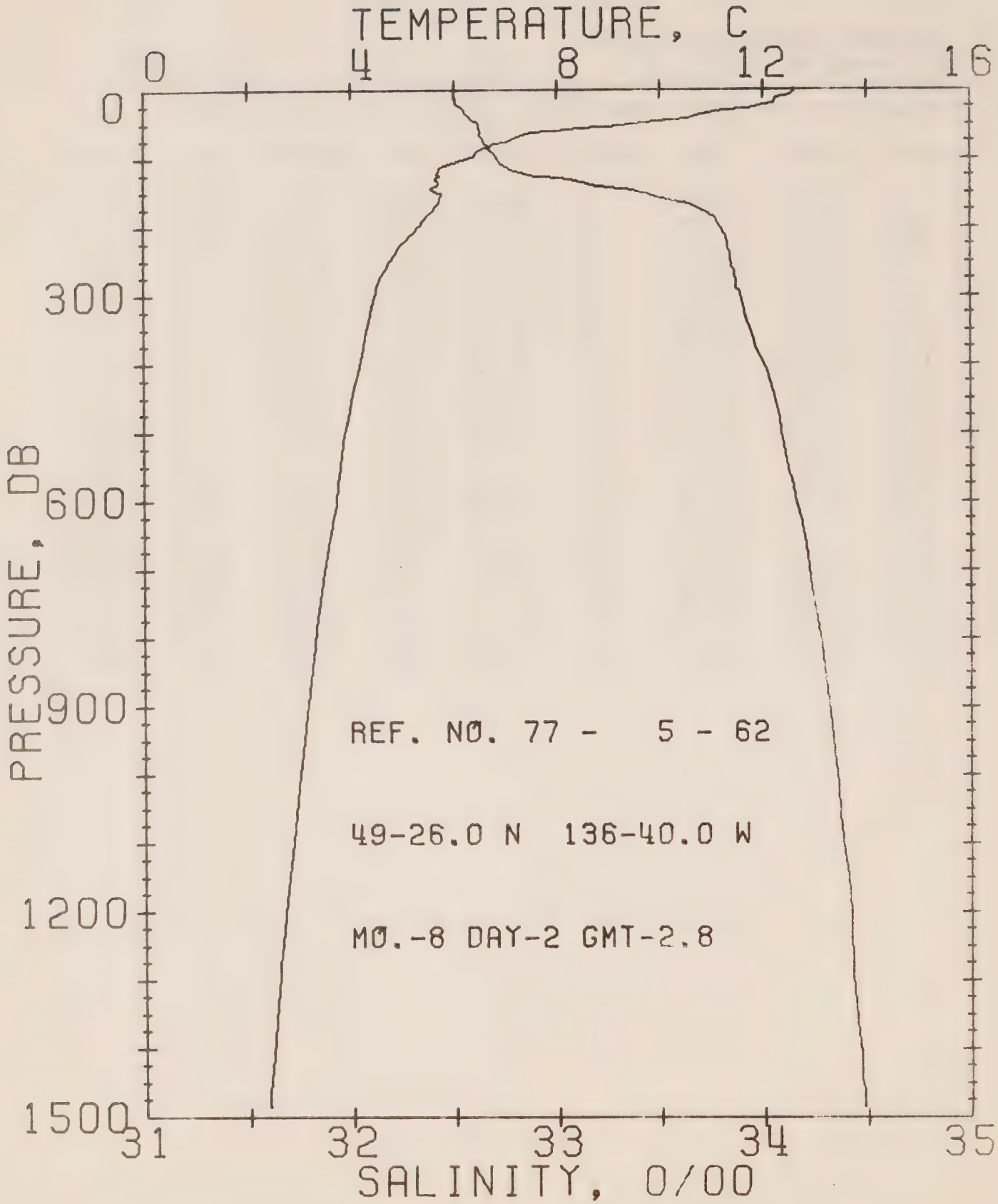
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 59 DATE 1/ 8/77 STATION 11
POSITION 49-41.0N, 140-40.0W GMT 12.6
RESULTS OF STP CAST 141 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.14	32.54	0	24.86	310.0	0.0	0.0	1491.
10	11.13	32.54	10	24.87	309.9	0.31	0.02	1492.
20	11.02	32.59	20	24.92	304.6	0.62	0.06	1491.
30	9.53	32.67	30	25.24	275.0	0.91	0.14	1486.
50	6.72	32.73	50	25.69	231.5	1.41	0.34	1476.
75	5.86	32.76	75	25.83	219.1	1.97	0.69	1473.
100	5.54	32.88	99	25.96	206.7	2.50	1.17	1472.
125	5.30	33.38	124	26.38	166.7	2.97	1.70	1472.
150	5.22	33.70	149	26.64	142.2	3.35	2.23	1473.
175	4.97	33.77	174	26.73	134.5	3.69	2.80	1472.
200	4.73	33.79	199	26.77	130.5	4.02	3.44	1472.
225	4.49	33.80	223	26.81	127.1	4.34	4.13	1471.
250	4.29	33.83	248	26.85	123.6	4.66	4.89	1471.
300	4.11	33.88	298	26.91	118.1	5.26	6.57	1471.
400	3.94	34.00	397	27.03	107.8	6.38	10.57	1472.
500	3.78	34.09	496	27.11	100.9	7.42	15.35	1473.
600	3.59	34.16	595	27.18	94.3	8.40	20.82	1474.
800	3.25	34.26	793	27.29	84.7	10.18	33.51	1476.
1000	2.92	34.34	990	27.39	76.4	11.80	48.30	1478.
1200	2.65	34.40	1188	27.46	70.0	13.26	64.68	1480.


TEMPERATURE, C
0
4
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16
0
300
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1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 61
49-34.0 N 138-40.0 W
MØ.-8 DAY-1 GMT-20.8
31
32
33
34
35
SALINITY, 0/00

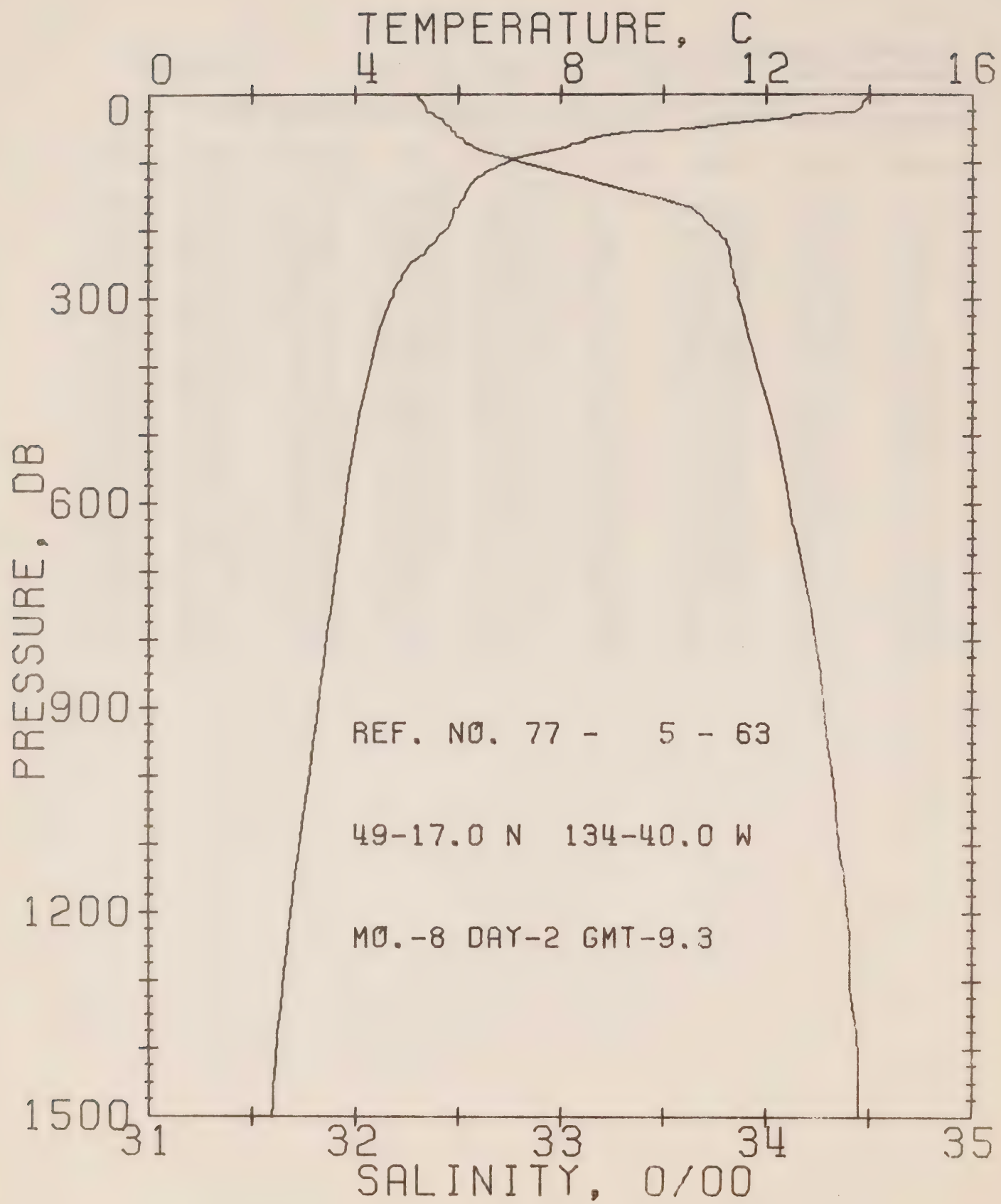
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 61 DATE 1/ 8/77 STATION 10
POSITION 49-34.0N, 138-40.0W GMT 20.8
RESULTS OF STP CAST 152 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.61	32.58	0	24.81	315.0	0.0	0.0	1493.
10	11.56	32.57	10	24.81	315.4	0.32	0.02	1493.
20	11.48	32.57	20	24.82	314.1	0.63	0.06	1493.
30	10.29	32.60	30	25.06	292.2	0.94	0.14	1489.
50	7.59	32.66	50	25.52	248.1	1.48	0.36	1479.
75	6.46	32.68	75	25.69	232.2	2.08	0.74	1475.
100	5.73	32.74	99	25.83	219.4	2.64	1.24	1473.
125	5.50	33.15	124	26.18	186.0	3.15	1.83	1473.
150	5.40	33.54	149	26.50	156.3	3.58	2.42	1473.
175	5.33	33.77	174	26.69	138.6	3.94	3.03	1474.
200	5.07	33.81	199	26.75	132.8	4.28	3.67	1473.
225	4.90	33.83	223	26.78	129.8	4.61	4.38	1473.
250	4.67	33.84	248	26.82	126.7	4.93	5.15	1472.
300	4.44	33.88	298	26.87	121.6	5.55	6.89	1472.
400	4.15	33.99	397	26.99	111.1	6.71	11.02	1473.
500	3.92	34.08	496	27.09	102.6	7.78	15.92	1473.
600	3.70	34.17	595	27.18	94.5	8.76	21.42	1474.
800	3.35	34.28	793	27.31	83.8	10.54	34.09	1476.
1000	2.98	34.37	990	27.41	75.0	12.12	48.57	1478.
1200	2.66	34.42	1188	27.48	68.2	13.56	64.60	1480.
1500	2.32	34.49	1484	27.56	61.2	15.50	91.29	1484.


TEMPERATURE, C
0
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12
16
0
300
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1200
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PRESSURE, DB
REF. NØ. 77 - 5 - 62
49-26.0 N 136-40.0 W
MØ.-8 DAY-2 GMT-2.8
31
32
33
34
35
SALINITY, 0/00

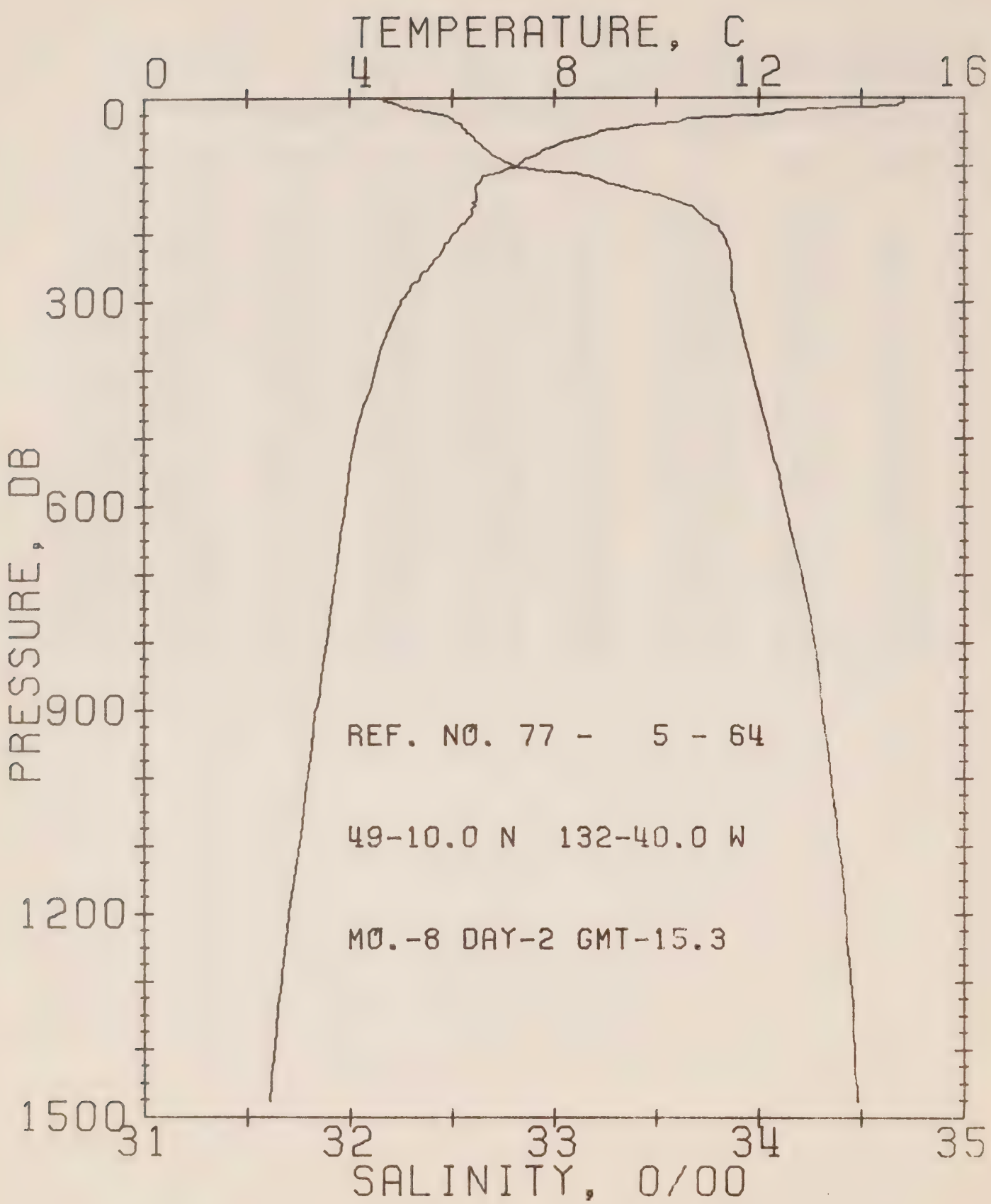
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 62 DATE 2/ 8/77 STATION 9
POSITION 49-26.0N, 136-40.0W GMT 2.8
RESULTS OF STP CAST 126 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.61	32.50	0	24.56	338.8	0.0	0.0	1496.
10	12.45	32.50	10	24.59	336.3	0.34	0.02	1496.
20	12.20	32.51	20	24.64	331.3	0.67	0.07	1495.
30	11.39	32.55	30	24.82	314.5	1.00	0.15	1493.
50	9.55	32.62	50	25.19	279.7	1.59	0.39	1487.
75	6.99	32.65	75	25.60	241.2	2.23	0.80	1477.
100	6.27	32.70	99	25.73	228.5	2.81	1.32	1475.
125	5.74	32.89	124	25.94	208.6	3.36	1.94	1473.
150	5.68	33.41	149	26.36	169.3	3.83	2.60	1474.
175	5.57	33.71	174	26.61	145.8	4.22	3.25	1474.
200	5.27	33.79	199	26.71	136.7	4.58	3.92	1474.
225	4.96	33.83	223	26.78	130.4	4.91	4.65	1473.
250	4.75	33.84	248	26.81	127.4	5.23	5.43	1473.
300	4.45	33.89	298	26.88	121.0	5.85	7.16	1472.
400	4.15	34.00	397	27.00	110.4	7.01	11.29	1473.
500	3.88	34.09	496	27.10	101.7	8.07	16.12	1473.
600	3.70	34.16	595	27.17	95.5	9.05	21.64	1474.
800	3.30	34.28	793	27.30	83.7	10.83	34.29	1476.
1000	2.99	34.35	990	27.40	76.0	12.43	48.90	1478.
1200	2.69	34.42	1188	27.47	69.0	13.88	65.12	1480.


TEMPERATURE, C
0
4
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16
0
300
600
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1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 63
49-17.0 N 134-40.0 W
MO.-8 DAY-2 GMT-9.3
31
32
33
34
35
SALINITY, O/OO

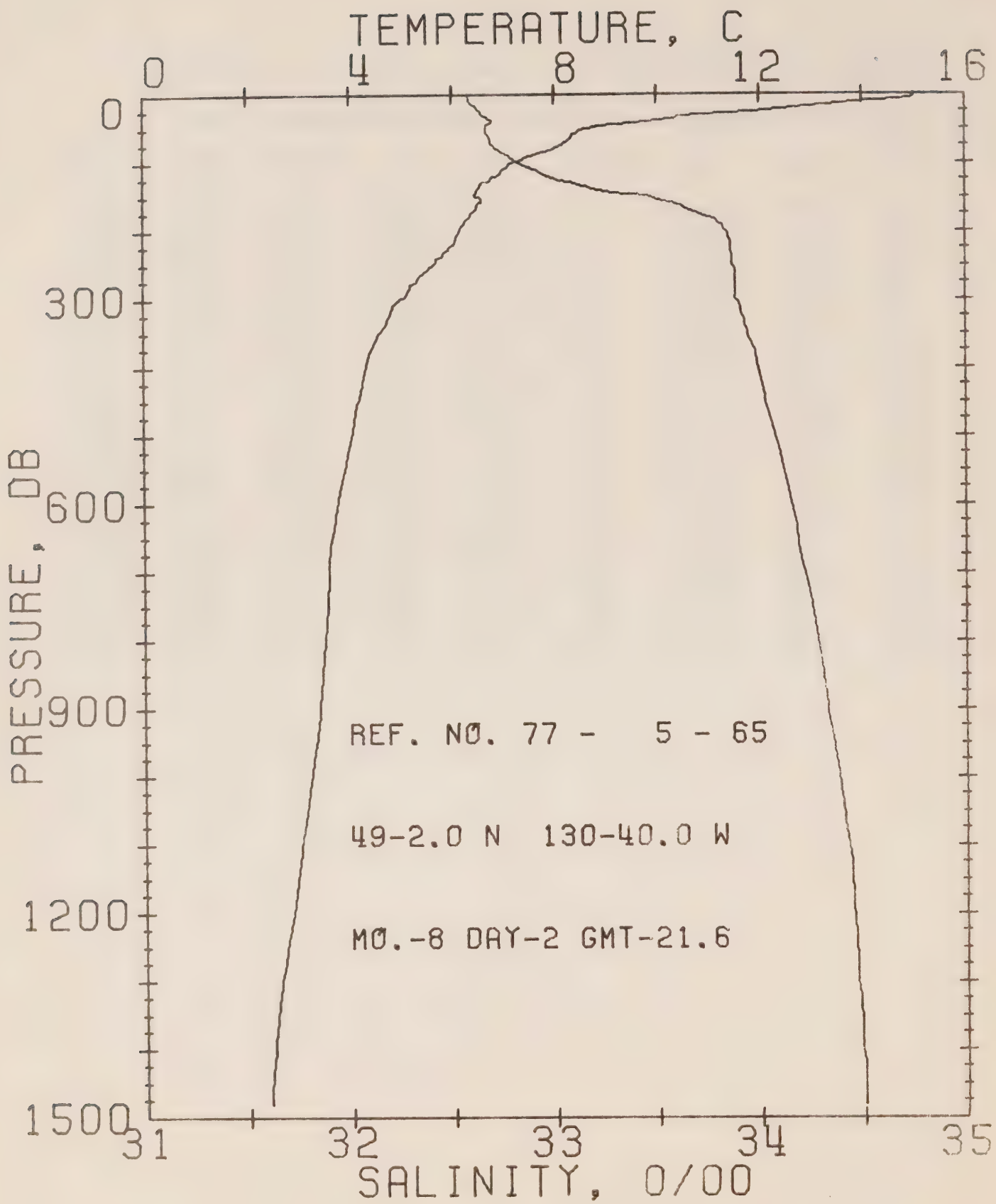
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 63 DATE 2/ 8/77 STATION 8
POSITION 49-17.0N, 134-40.0W GMT 9.3
RESULTS OF STP CAST 120 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.97	32.30	0	24.13	379.3	0.0	0.0	1501.
10	13.91	32.32	10	24.16	377.1	0.38	0.02	1501.
20	13.82	32.34	20	24.20	373.9	0.75	0.08	1501.
30	12.48	32.38	30	24.49	346.2	1.12	0.17	1496.
50	10.56	32.46	50	24.90	307.2	1.78	0.44	1490.
75	8.18	32.56	75	25.36	263.8	2.48	0.88	1482.
100	6.92	32.81	99	25.73	228.8	3.09	1.43	1477.
125	6.33	33.12	124	26.06	198.2	3.63	2.04	1476.
150	6.11	33.43	149	26.33	172.5	4.09	2.68	1476.
175	5.91	33.67	174	26.53	153.2	4.49	3.35	1476.
200	5.74	33.75	199	26.63	144.9	4.87	4.06	1476.
225	5.42	33.82	224	26.71	136.6	5.22	4.82	1475.
250	5.05	33.83	248	26.77	131.7	5.55	5.63	1474.
300	4.70	33.87	298	26.84	125.2	6.19	7.43	1473.
400	4.29	33.96	397	26.95	115.1	7.39	11.69	1473.
500	4.01	34.05	496	27.05	106.2	8.49	16.75	1474.
600	3.81	34.11	595	27.13	99.9	9.52	22.51	1475.
800	3.43	34.24	793	27.27	87.7	11.39	35.82	1477.
1000	3.10	34.32	991	27.36	79.4	13.07	51.12	1478.
1200	2.75	34.40	1188	27.45	71.3	14.57	68.01	1480.
1500	2.38	34.45	1484	27.53	64.8	16.60	95.84	1484.


TEMPERATURE, C
0
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1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 64
49-10.0 N 132-40.0 W
MO.-8 DAY-2 GMT-15.3
31
32
33
34
35
SALINITY, O/OO

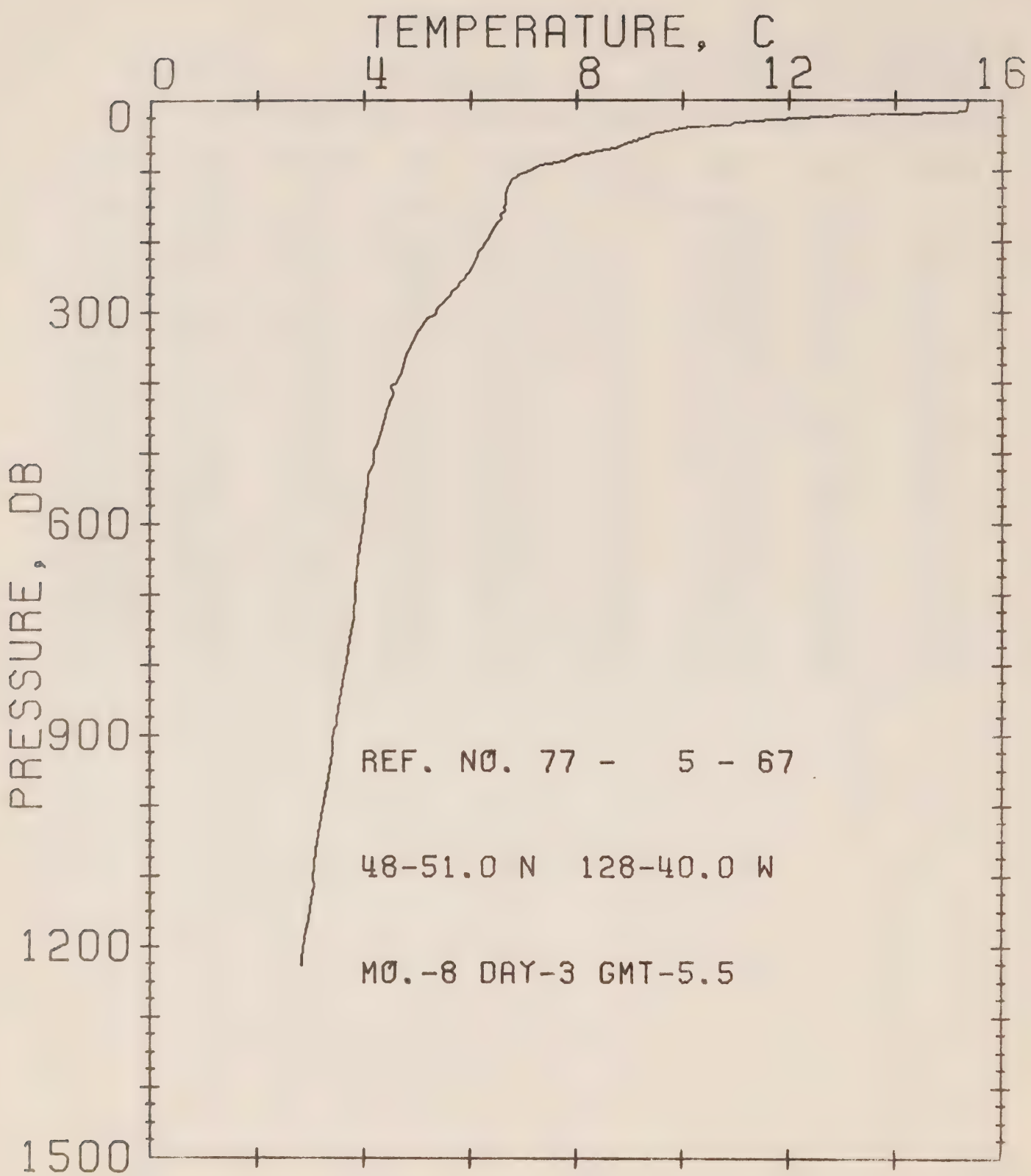
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 64 DATE 2/ 8/77 STATION 7
POSITION 49-10.0N. 132-40.0W GMT 15.3
RESULTS OF STP CAST 142 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.83	32.17	0	23.85	405.9	0.0	0.0	1503.
10	14.76	32.23	10	23.92	400.6	0.40	0.02	1503.
20	12.51	32.36	20	24.47	348.0	0.78	0.08	1496.
30	10.86	32.49	30	24.88	309.4	1.11	0.16	1491.
50	8.85	32.57	50	25.26	272.5	1.69	0.40	1484.
75	7.81	32.66	75	25.49	251.1	2.35	0.81	1480.
100	7.28	32.81	99	25.68	233.5	2.95	1.35	1479.
125	6.50	33.26	124	26.14	190.2	3.47	1.95	1477.
150	6.47	33.58	149	26.40	166.2	3.92	2.57	1478.
175	6.35	33.72	174	26.52	154.3	4.31	3.22	1478.
200	6.03	33.82	199	26.64	143.2	4.68	3.93	1477.
225	5.80	33.86	223	26.70	138.2	5.03	4.69	1476.
250	5.54	33.87	248	26.74	134.4	5.38	5.52	1476.
300	5.00	33.88	298	26.81	127.8	6.03	7.35	1474.
400	4.50	33.97	397	26.94	116.8	7.25	11.70	1474.
500	4.09	34.05	496	27.05	106.9	8.37	16.81	1474.
600	3.90	34.13	595	27.13	99.6	9.40	22.59	1475.
800	3.53	34.27	793	27.28	86.9	11.26	35.80	1477.
1000	3.17	34.35	991	27.38	78.1	12.91	50.89	1479.
1200	2.81	34.42	1188	27.47	69.9	14.38	67.42	1481.


TEMPERATURE, C
0
4
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12
16
0
300
600
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1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 65
49-2.0 N 130-40.0 W
MØ.-8 DAY-2 GMT-21.6
31
32
33
34
35
SALINITY, 0/00

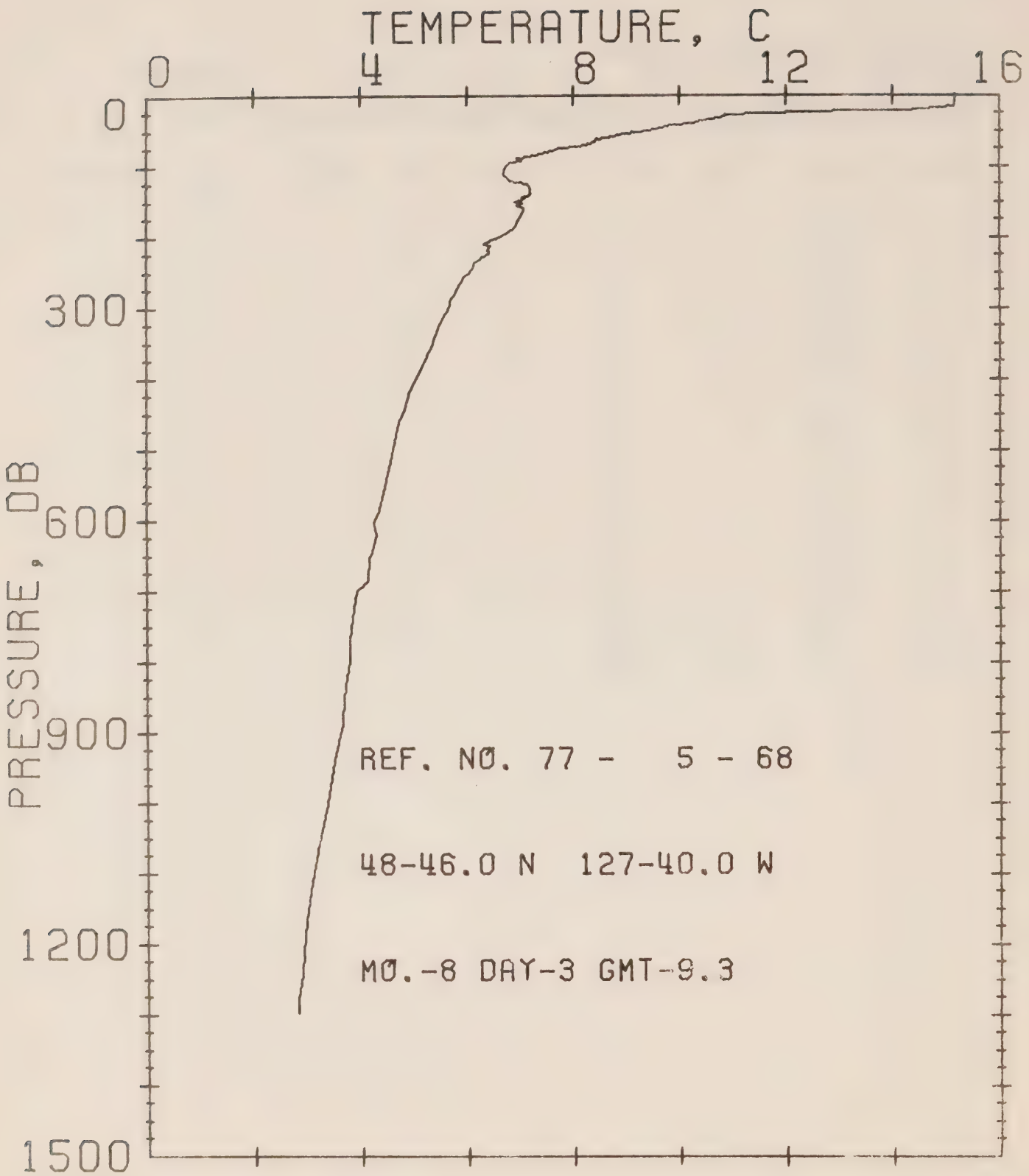
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 65 DATE 2/ 8/77 STATION 6
POSITION 49- 2.0N, 130-40.0W GMT 21.6
RESULTS OF STP CAST 158 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	15.00	32.58	0	24.13	379.4	0.0	0.0	1504.
10	14.31	32.59	10	24.29	365.2	0.38	0.02	1502.
20	12.74	32.62	20	24.63	332.8	0.73	0.07	1497.
30	11.03	32.65	30	24.97	300.5	1.04	0.15	1492.
50	8.70	32.67	50	25.37	262.9	1.60	0.38	1483.
75	8.09	32.70	75	25.48	252.6	2.24	0.79	1482.
100	7.13	32.83	99	25.72	230.0	2.85	1.33	1478.
125	6.74	33.02	124	25.92	211.1	3.40	1.96	1477.
150	6.49	33.47	149	26.31	174.7	3.89	2.64	1477.
175	6.37	33.71	174	26.51	155.8	4.31	3.33	1478.
200	6.14	33.84	199	26.64	143.6	4.68	4.04	1477.
225	5.94	33.86	223	26.68	139.7	5.03	4.80	1477.
250	5.63	33.87	248	26.73	135.4	5.37	5.63	1476.
300	4.99	33.88	298	26.81	127.8	6.03	7.47	1474.
400	4.32	33.99	397	26.98	112.8	7.22	11.70	1473.
500	4.03	34.08	496	27.07	104.3	8.31	16.68	1474.
600	3.75	34.16	595	27.16	96.2	9.31	22.29	1474.
800	3.50	34.28	793	27.29	85.6	11.12	35.17	1477.
1000	3.21	34.38	991	27.40	76.3	12.74	50.04	1479.
1200	2.84	34.45	1188	27.49	68.3	14.18	66.14	1481.


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NØ. 77 - 5 - 67
48-51.0 N 128-40.0 W
MØ.-8 DAY-3 GMT-5.5

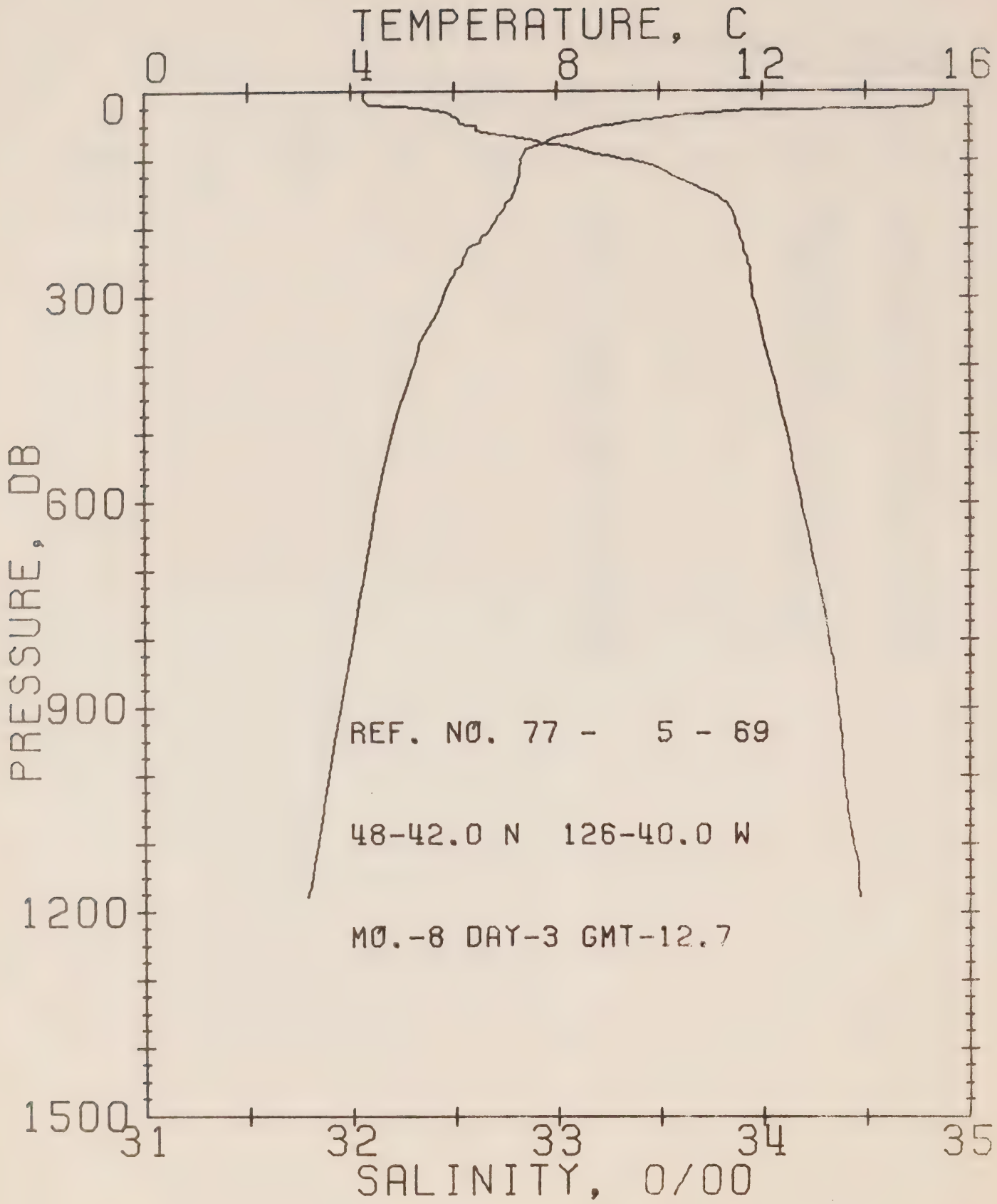
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 67 DATE 3/ 8/77 STATION 5
POSITION 48-51.0N, 128-40.0W GMT 5.5
RESULTS OF STP CAST 94 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	15.37		0					
10	15.37		10					
20	14.52		20					
30	11.37		31					
50	9.38		51					
75	8.26		76					
100	7.11		102					
125	6.71		127					
150	6.65		153					
175	6.51		178					
200	6.31		204					
225	6.12		229					
250	5.91		255					
300	5.36		306					
400	4.62		407					
500	4.19		509					
600	4.00		611					
800	3.66		814					
1000	3.24		1017					
1200	2.87		1220					


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 68
48-46.0 N 127-40.0 W
MO.-8 DAY-3 GMT-9.3

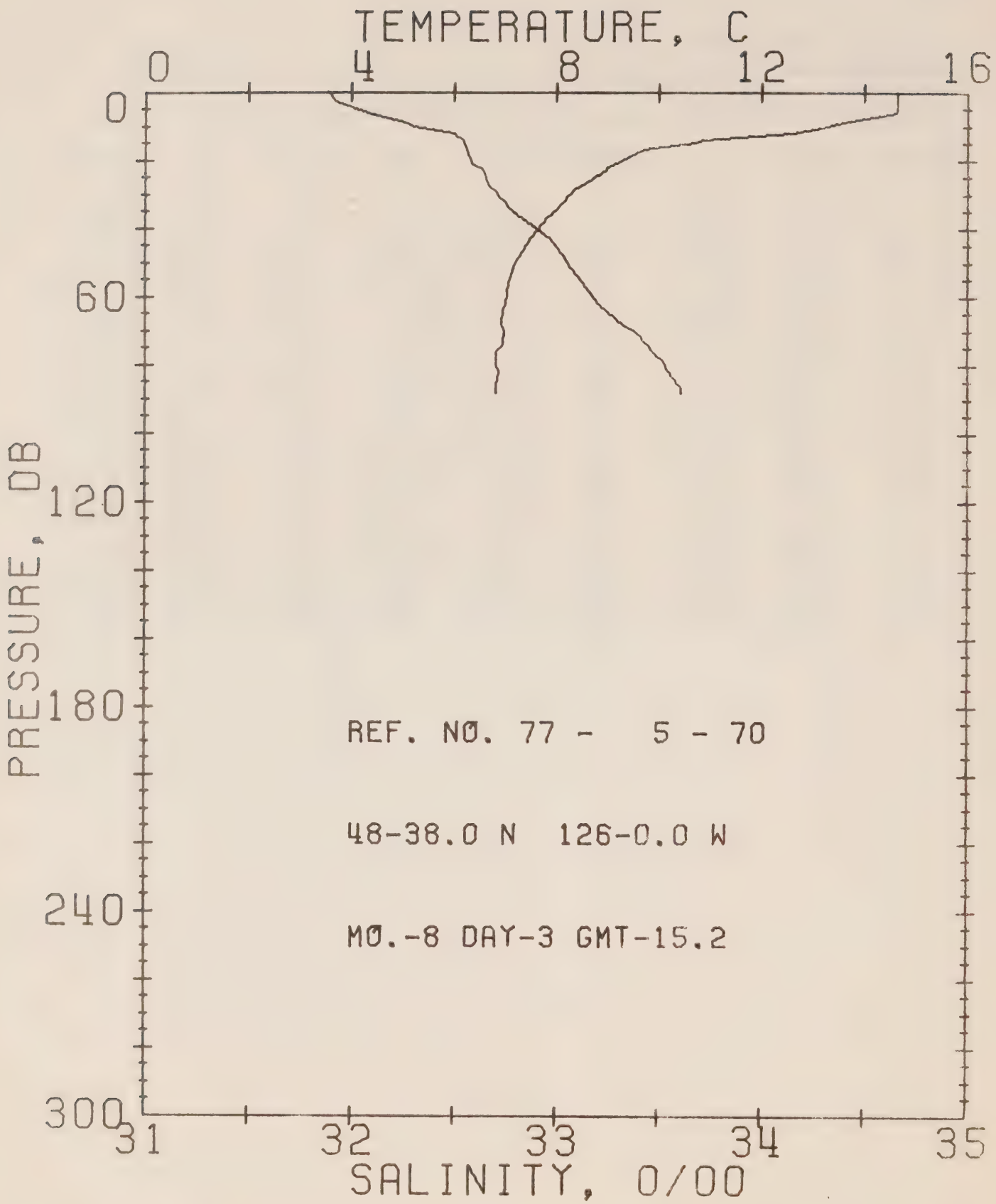
OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 68 DATE 3/ 8/77 STATION 4
POSITION 48-46.0N, 127-40.0W GMT 9.3
RESULTS OF STP CAST 100 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	15.16		0					
10	15.16		10					
20	14.58		20					
30	10.87		31					
50	9.39		51					
75	7.73		76					
100	6.77		102					
125	7.15		127					
150	6.93		153					
175	7.00		178					
200	6.59		204					
225	6.38		229					
250	6.05		255					
300	5.66		306					
400	5.05		407					
500	4.62		509					
600	4.26		611					
800	3.79		814					
1000	3.35		1017					
1200	2.91		1220					


TEMPERATURE, C
0
4
8
12
16
0
300
600
900
1200
1500
PRESSURE, DB
REF. NO. 77 - 5 - 69
48-42.0 N 126-40.0 W
MO.-8 DAY-3 GMT-12.7
31
32
33
34
35
SALINITY, O/OO

OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 69 DATE 3/ 8/77 STATION 3
POSITION 48-42.0N, 126-40.0W GMT 12.7
RESULTS OF STP CAST 110 POINTS TAKEN FROM ANALOG TRACE

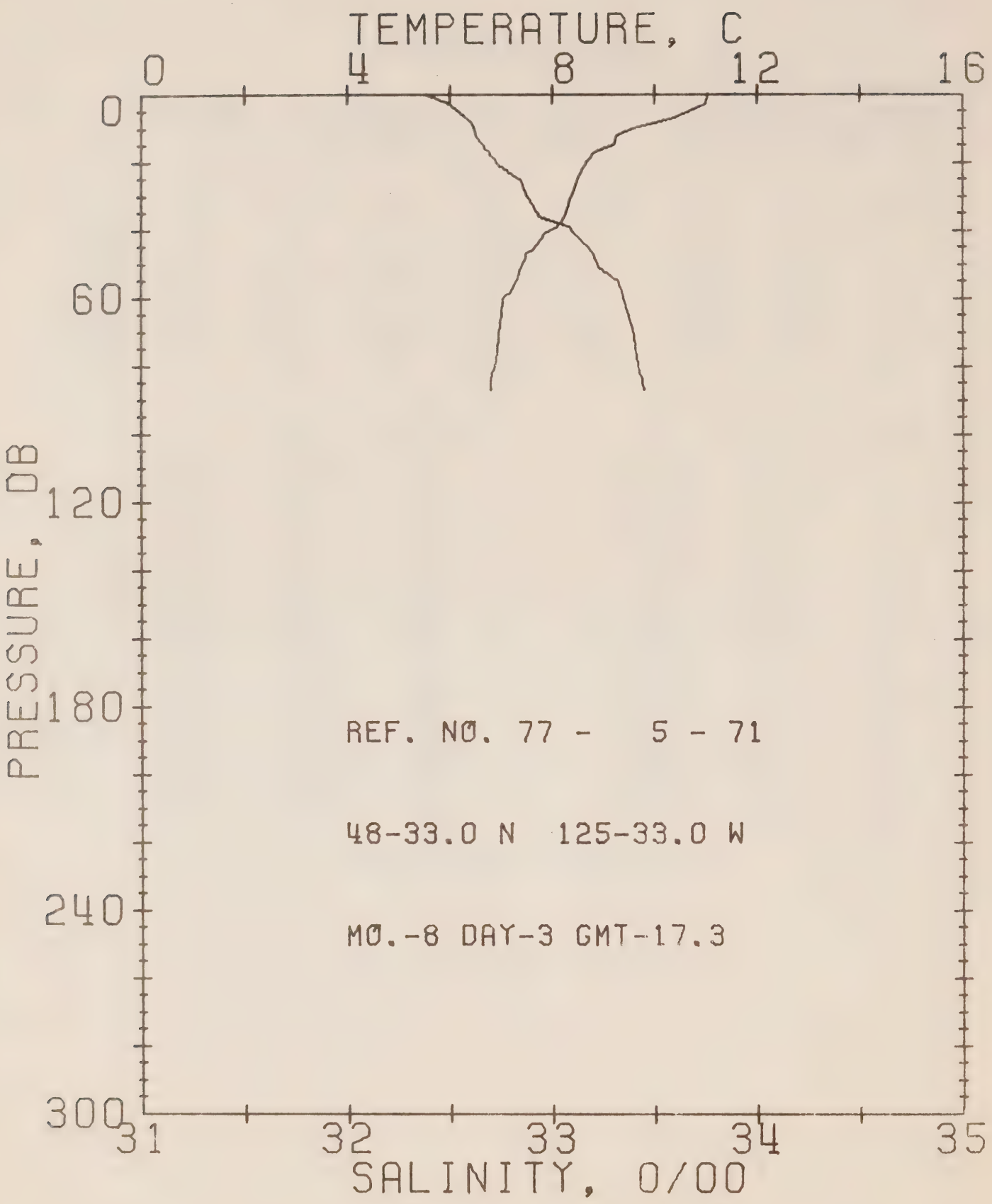
PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	15.33	32.06	0	23.66	424.3	0.0	0.0	1505.
10	15.33	32.06	10	23.66	424.8	0.42	0.02	1505.
20	15.29	32.09	20	23.69	422.0	0.85	0.09	1505.
30	11.59	32.44	30	24.70	325.9	1.23	0.18	1493.
50	9.00	32.57	50	25.24	274.8	1.82	0.42	1484.
75	7.78	32.92	75	25.70	231.7	2.46	0.82	1481.
100	7.29	33.34	99	26.10	194.1	2.99	1.29	1480.
125	7.27	33.57	124	26.28	177.2	3.45	1.82	1480.
150	7.16	33.75	149	26.44	162.4	3.87	2.42	1480.
175	6.94	33.85	174	26.55	152.5	4.26	3.06	1480.
200	6.72	33.88	199	26.60	147.9	4.64	3.78	1480.
225	6.35	33.91	223	26.67	141.4	5.00	4.57	1479.
250	6.16	33.93	248	26.71	137.6	5.35	5.41	1478.
300	5.78	33.95	298	26.78	132.0	6.02	7.29	1478.
400	5.23	34.04	397	26.91	119.9	7.28	11.77	1477.
500	4.78	34.12	496	27.03	109.8	8.42	17.02	1477.
600	4.48	34.19	595	27.11	102.1	9.48	22.95	1478.
800	4.02	34.32	793	27.27	88.6	11.39	36.49	1479.
1000	3.55	34.39	991	27.37	79.5	13.06	51.79	1481.


TEMPERATURE, C
0
4
8
12
16
0
60
120
180
240
300
PRESSURE, DB
REF. NØ. 77 - 5 - 70
48-38.0 N 126-0.0 W
MØ.-8 DAY-3 GMT-15.2
31
32
33
34
35
SALINITY, 0/00

OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 70 DATE 3/ 8/77 STATION 2
POSITION 48-38.0N, 126- 0.0W GMT 15.2
RESULTS OF STP CAST 33 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.65	31.89	0	23.68	422.9	0.0	0.0	1502.
10	13.31	32.31	10	24.27	366.3	0.41	0.02	1499.
20	9.30	32.58	20	25.21	277.8	0.71	0.07	1485.
30	8.28	32.71	30	25.46	253.7	0.98	0.13	1482.
50	7.21	33.05	50	25.88	213.9	1.44	0.32	1478.
75	6.89	33.45	75	26.24	180.0	1.94	0.63	1478.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	14.65	31.89	43.	7.49	32.97
3.	14.65	31.93	49.	7.26	33.04
6.	14.65	32.08	50.	7.21	33.05
9.	13.59	32.26	56.	7.06	33.13
10.	13.31	32.31	62.	7.01	33.20
12.	12.60	32.50	64.	6.96	33.24
14.	10.88	32.54	68.	6.93	33.32
15.	10.73	32.55	70.	6.98	33.38
17.	9.71	32.56	74.	6.95	33.44
18.	9.55	32.57	76.	6.84	33.47
21.	9.17	32.59	79.	6.83	33.52
22.	9.01	32.63	80.	6.82	33.53
23.	8.98	32.64	82.	6.87	33.55
27.	8.55	32.66	86.	6.84	33.60
28.	8.41	32.68	87.	6.83	33.61
35.	7.97	32.78	88.	6.82	33.61
37.	7.82	32.83			


TEMPERATURE, C
0
4
8
12
16
0
60
120
180
240
300
PRESSURE, DB
REF. NØ. 77 - 5 - 71
48-33.0 N 125-33.0 W
MØ.-8 DAY-3 GMT-17.3
31
32
33
34
35
SALINITY, 0/00

OFFSHORE OCEANOGRAPHY GROUP
REFERENCE NO. 77- 5- 71 DATE 3/ 8/77 STATION 1
POSITION 48-33.0N, 125-33.0W GMT 17.3
RESULTS OF STP CAST 33 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.03	32.39	0	24.76	319.1	0.0	0.0	1491.
10	9.56	32.62	10	25.19	278.9	0.30	0.01	1486.
20	8.66	32.73	20	25.42	257.6	0.57	0.06	1483.
30	8.37	32.88	30	25.58	242.2	0.82	0.12	1482.
50	7.43	33.22	50	25.99	204.0	1.26	0.30	1479.
75	6.92	33.41	75	26.20	183.6	1.74	0.60	1478.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	11.03	32.39	46.	7.59	33.19
3.	11.02	32.50	47.	7.50	33.20
7.	10.36	32.58	48.	7.49	33.21
8.	10.10	32.60	51.	7.40	33.23
10.	9.56	32.62	55.	7.30	33.32
12.	9.25	32.63	56.	7.26	33.33
15.	9.20	32.66	58.	7.19	33.34
17.	8.82	32.69	60.	7.03	33.35
21.	8.61	32.74	64.	7.01	33.37
25.	8.47	32.85	71.	6.96	33.40
29.	8.39	32.87	75.	6.92	33.41
31.	8.35	32.89	80.	6.88	33.42
35.	8.26	32.93	82.	6.84	33.43
36.	8.25	32.94	84.	6.80	33.44
39.	8.10	33.08	86.	6.80	33.44
41.	7.87	33.11	87.	6.79	33.45
45.	7.66	33.18			

Surface Salinity and Temperature Observations

(P-77-5)

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 77 5

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DY	GMT	0/00	C	WEST
77	6	17	1740	30.643	10.5	123-30
77	6	17	1845	30.830	12.5	124- 0
77	6	17	2010	30.943	12.9	124 30
77	6	17	2135	30.999	12.9	125- 0
77	6	17	2315	31.055	12.7	125-33
77	6	18	120	31.216	12.0	126- 0
77	6	18	350	32.964b	11.5	126-40
77	6	18	730	32.247	11.3	127-40
77	6	18	1115	32.980	10.3	127-40
77	6	18	1510	32.495	11.1	129-40
77	6	18	1750	32.470	11.7	130-40
77	6	18	2330	32.483b	11.6	131-40
77	6	19	210	32.456	11.6	132-40
77	6	19	545	32.426b	11.8	133-40
77	6	19	823	32.361	11.8	134-40
77	6	19	1205	32.506b	10.5	135-40
77	6	19	1450	32.554	10.6	136-40
77	6	19	1845	32.566b	10.6	137-40
77	6	19	2130	32.592b	10.5	138-40
77	6	20	240	32.614b	10.1	139-40
77	6	20	515	32.642b	9.8	140-40
77	6	20	900	32.631b	9.6	141-40
77	6	20	1200	32.647b	9.3	142-40
77	6	20	1700	32.636b	9.1	143-40
77	6	21	0	32.697	9.0	ON STATION
77	6	22	0	32.696b	8.9	ON STATION
77	6	23	0	32.730	9.1	ON STATION
77	6	24	0	32.696	9.0	ON STATION
77	6	25	0	32.707	8.7	ON STATION
77	6	26	0	32.712	8.8	ON STATION
77	6	27	0	32.689	8.4	ON STATION
77	6	28	0	32.734	8.4	ON STATION
77	6	29	0	32.691	8.4	ON STATION
77	6	30	0	32.692	8.3	ON STATION
77	7	1	0	32.717	8.3	ON STATION
77	7	1	2000	32.685		144-49
77	7	1	2300	32.652		143-50
77	7	2	200	32.656		142-46
77	7	2	500	32.651		141-39
77	7	2	800	32.650		140-49
77	7	2	1100	32.641		139-54
77	7	2	1400	32.624		138-51
77	7	2	1700	32.524		137-50
77	7	2	2000	32.497		136-50

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 77- 5

DATE/TIME				SALINITY	TEMP	LONGITUDE	
YR	MO	DY	GMT	0/00	C	WEST	
77	7	2	2300	32.424		135-47	
77	7	3	200	32.188		134-46	
77	7	3	500	32.190		133-50	
77	7	3	800	32.185		132-44	
77	7	3	1100	32.152		131-45	
77	7	3	1400	32.103		130-48	
77	7	3	1700	32.063		129-42	
77	7	3	2000	31.865		128-35	
77	7	3	2300	31.578		128- 2	
77	7	4	200	32.006		128-56	
77	7	4	500	32.105		129-50	
77	7	4	800	31.986		130-40	
77	7	4	1100	32.186		131-35	
77	7	4	1400	32.177		132-19	
77	7	4	1700	32.183		133-12	
77	7	4	2000	32.226		134- 2	
77	7	4	2300	32.190		134-58	
77	7	5	200	32.436		135-48	
77	7	5	500	32.465		136-40	
77	7	5	800	32.500		137-36	
77	7	5	1100	32.611		138-27	
77	7	5	1400	32.610		139-10	
77	7	5	1700	32.648		140- 6	
77	7	5	2000	32.642		140-55	
77	7	5	2300	32.641		141-51	
77	7	6	200	32.647		142-30	
77	7	6	500	32.674		143-13	
77	7	6	800	32.631		143-46	
77	7	7	0	32.711	8.7	ON STATION	
77	7	8	0	32.702	8.8	ON STATION	
77	7	9	0	32.697	9.2	ON STATION	
77	7	10	0	32.692	8.8	ON STATION	
77	7	11	0	32.678	9.0	ON STATION	
77	7	12	0	32.590	9.2	ON STATION	
77	7	13	0	32.666	9.4	ON STATION	
77	7	14	0	32.644	9.5	ON STATION	
77	7	15	0	32.638	9.7	ON STATION	
77	7	16	0	32.622	9.6	ON STATION	
77	7	17	0	32.614	10.0	ON STATION	
77	7	18	0	32.628	10.5	ON STATION	
77	7	19	0	32.632	10.8	ON STATION	
77	7	20	0	32.623	10.5	ON STATION	
77	7	21	0	32.630	10.3	ON STATION	
77	7	22	0	32.624	10.6	ON STATION	

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 77- 5

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DY	GMT	0/00	C	WEST
77	7	23	0	32.620	10.5	ON STATION
77	7	24	0	32.626	10.8	ON STATION
77	7	25	0	32.604	11.0	ON STATION
77	7	26	0	32.641	11.7	ON STATION
77	7	27	0	32.612	11.9	ON STATION
77	7	28	0	32.579	11.7	ON STATION
77	7	29	0	32.556	11.7	ON STATION
77	7	30	0	32.547	11.5	ON STATION
77	7	31	0	32.523	11.4	ON STATION
77	8	1	0	32.519	11.6	ON STATION
77	8	1	100	32.504	11.9	143-40
77	8	1	505	32.547	11.9	142-40
77	8	1	935	32.532	11.4	141-40
77	8	1	1230	32.526	11.2	140-40
77	8	1	1600	32.528	11.4	139-40
77	8	1	1850	32.508	11.6	138-40
77	8	20	10	32.484	12.7	137-40
77	8	20	250	32.474	12.8	136-40
77	8	20	610	32.471	13.2	135-40
77	8	20	842	32.395	14.2	134-40
77	8	20	1240	32.211	14.7	133-40
77	8	20	1515	32.157	14.9	132-40
77	8	20	1828	32.405	15.0	131-40
77	8	20	2115	32.472	15.0	130-40
77	8	3	235	32.488	15.3	129-40
77	8	3	525	32.140	15.6	128-40
77	8	3	840	31.992	15.2	127-40
77	8	3	1230	32.026		126-40
77	8	3	1510	31.806		126- 0
77	8	3	1705	31.711		125-33
77	8	3	2015	32.100		124-30
77	8	3	2205	32.352		124- 0
77	8	3	2345	31.337		123-30

b DENOTES SALINITY SAMPLE TAKEN FROM A BUCKET. ALL OTHER SAMPLES TAKEN FROM THE SEAWATER LOOP

LIST OF OMISSIONS FROM DATA

Hydrographic Data:

Consec. #	Depth (m)	Temp.	Sal.	O_2	1.	2.	3.	Comments
17	285		*		*			
	2997		*				*	
	3990		*				*	
	3990			*	*			
	4088		*		*			
	4177		*				*	
	4177			*		*		
23	2261-4186		*			*		
	2261-4186			*		*		
28	2898		*				*	
	3882		*			*		
	3882			*		*		
	4064		*			*		
	4064			*		*		
35	402		*			*		Mistrip
	402			*		*		Mistrip
	2950		*				*	
	3953			*	*			
	4053		*		*			
	4053			*		*		
	4153		*			*		
	4153			*		*		
42	4002			*		*		
	4102			*		*		
50	2502	*				*		Too high
	4106		*		*			
	4106			*		*		
	4196		*			*		
	4196			*		*		
	4206		*				*	
	4206			*		*		
60	1509		*			*		
66	582		*		*			

Notes (MacNeill, 1977):

1. The data is suspect because of a reversal of gradient by >.01 °/oo (salinity) or >.08 ml/ℓ (oxygen).

2. The data is deleted because of very irregular data values (usually a mistripping or leaking bottle if both oxygen and salinity are irregular).

3. The data is deleted because duplicate samples at a depth were not within .01 °/oo (salinity) or .08 ml/ℓ (oxygen).

STD Data:

Consecutive number	Comments
5	omitted, depth scale off
9	temperature only, salinity off scale
15	omitted, depth scale off; see #16 for STP done the same day
32	to 1200 m only, below 1200 m is too irregular
43	temperature only, salinity too low compared to #41 and #44
55	temperature only, salinity too irregular
67	temperature only, salinity off scale
68	temperature only, salinity too irregular

25100